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Understanding Men's Sexual Aggression Against Women:

Dehumanization, Objectification, &

Development of a Measure of Online Intrusive Behaviors

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Abstract

This thesis successfully accomplishes two major aims. First, it explores the relationship between dehumanization, objectification, and men's sexual aggression. Correlational and experimental results robustly support a role of dehumanization (particularly animalistic dehumanization), but not objectification, in men's sexual aggression in an online context and when there is limited information about the potential target woman. However, evidence from this thesis does not point to a role of dehumanization or objectification in a more naturalistic (lab) setting, or when there is more than minimal information about a woman available to men. Secondly, we aimed to develop and validate a novel behavioral measure of men's sexual aggression, the intrusive behavior paradigm. This methodology can be used to assess emerging manifestations of sexual aggression in the form of online behaviors specific to the digital age (otherwise known as technology-facilitated sexual aggression), as well as sexual aggression more generally. Results broadly support the use of this paradigm as representing a realistic and ecologically valid; practically effective and feasible; and ethically sound alternative that complements and expands on existing measures of men's sexual aggression.

Lay Summary

This thesis successfully accomplishes two major goals. First, it explored the relationship between treating people as less than fully human (dehumanization), treating people as objects (objectification), and men's sexual aggression against women. Our first set of results support a role of one particular form of dehumanization- involving treating people as more similar to animals- in men's sexual aggression against a woman. Results did not support a role of objectification. This pattern was seen when testing was conducted in an online context and when there was limited information about the woman in question. Further evidence from this thesis does not point to a role of dehumanization or objectification when testing was conducted in a lab, or when men received more than minimal information about the woman as a person. For our second goal, we aimed to develop a new way to measure of men's sexual aggression behaviors, which we refer to as the intrusive behavior paradigm. This methodology can be used to assess sexual aggression that takes place online, as well as sexual aggression more generally. Results broadly support the use of this paradigm as representing a realistic, practical, and ethical alternative that complements and expands on existing measures of men's sexual aggression.

Declaration

I declare that this thesis, presented for the degree of Doctorate of Philosophy, is an original report of my own research, has not been submitted for any previous degree or professional qualification, and has been composed entirely by me except where collaboration is indicated. I confirm that the work submitted is my own, except where jointly authored publication materials have been included. My own contributions and those of the other author in these instances have been explicitly indicated below.

Parts of this work have been peer-reviewed and published in the journal *Sex Roles*. Specifically, the work presented in Chapters 2 & 3 appears in “Insights Into Men’s Sexual Aggression Toward Women: Dehumanization and Objectification,” by Casey L. Bevens (myself) and Steve Loughnan (thesis primary supervisor). This work was conceived of by both authors. I carried out all data collection, analysis, and writing.

Signed

Casey L. Bevens

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Dedication

For Evangelynn Skye Bevens Ramos.

“We’ll make it right for you. If we lay a strong enough foundation, we’ll pass it on to you, we’ll give the world to you, and you’ll blow us all away.”

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Chapter 1- Introduction

Overview of Thesis

The first and overarching aim of this thesis is to explicitly examine the potential role of dehumanization and objectification in men's perpetration of sexual aggression against women. We seek to examine this problem as broadly and thoroughly as possible, and thus our conceptualization of the outcome of sexual aggression includes a continuum that ranges from attitudes and interests to behaviors. Additionally, we include multiple known correlates throughout, in service of conducting as robust and controlled a series of tests as possible. Thereby, we hope to empirically integrate the broad knowledge of the field of sexual aggression with that of dehumanization and objectification. The second aim, which is subsumed within the first, is to develop and validate a novel behavioral measure of sexual aggression which: (1) is realistic and ecologically valid, (2) can be implemented in practice effectively, and (3) circumvents the limitations of prior measures whilst remaining ethically viable. These primary aims are addressed in the seven chapters of the thesis.

The purpose of this introductory chapter is to provide a broad foundation for the rationale underpinning the five empirical chapters that follow by covering in some detail existing perspectives concerning the problem of sexual aggression, as well as dehumanization and objectification. Additional introductory information is also contained in chapter 2, which presents a portion of this thesis as it appears in contributing to the literature

of the field in published form. This second chapter also launches the body of empirical work by covering two studies which act to establish initial robust correlational and experimental evidence of a relationship between dehumanization, objectification, and sexual aggression, and concludes with the intention for future work that will implement a test of these effects in a lab setting. Chapter 3 includes a series of three studies conducted as intermediary support for the work presented in Chapter 2. Specifically, these include two preliminary versions of the methodology for Study 2, and a pilot of certain materials used therein. These also appear in similar form to their original, wherein they constituted supplementary materials for the publication presented in Chapter 2. Next, Chapters 4 & 5 include a total of six studies which build the empirical foundation for the final lab study. This lab study is then itself presented in Chapter 6 and includes implementation of the newly developed measure of sexual aggression. Finally, Chapter 7 concludes this thesis by discussing implications and examining potential applications of the results garnered via this work as a whole - for both the fields of dehumanization and objectification, and sexual aggression.

Introduction Overview

The introduction given in this chapter aims to supplement and complement in greater depth that introductory information which is already provided as related to this thesis in published form (and presented in Chapter 2), with as little redundancy for the reader as possible. Thus, in comparison to those sections to follow in subsequent chapters, here we will build the

wider context for the present work by outlining more broadly the existing schools of thought within the two main research areas which this thesis seeks to bridge. First, we will examine the problem - men's sexual aggression - by summarizing existing theoretical perspectives and measures. Then, we will similarly examine the theory concerning the proposed predictors of interest to this thesis - dehumanization and objectification. Lastly, we will cover the directions taken in the body of work to follow, including the expectations held at the outset for its contributions to the literature, and precisely what is expected to be found.

Men's Sexual Aggression Perpetration. Sexual aggression continues to effect the lives of women and girls to a disproportionate degree, with both official government reports (Bureau of Justice Statistics, 1997; Breiding et al., 2014; Center for Disease Control, 2020; Fisher & Cullen, 1999; Garcia-Moreno, Jansen, Ellsberg, Heise, & Watts, 2006; Kilpatrick, Edmunds, & Seymour, 1992; Smith et al., 2017; Tjaden & Thoennes, 1998; Walby & Allen, 2004) and popular media (e.g. Perez-Pena, 2015) commonly citing statistics suggesting that approximately 1 in 4 (Cantor et al., 2015) women (or rates very similar to this number) will experience sexual aggression in their lifetime. The exact number is often somewhat pedantically criticized or 'debated,' particularly by writers who are anti- feminist under the guise of advocating for scientific rigor (e.g. Earp, 2016; Gerstmann, 2019). However, classically cited empirical work (Fisher, Daigle, & Cullen, 2010; Koss, Gidycz, & Wisniewski, 1987), more contemporary studies (Basile,

Chen, Black, & Saltzman, 2007; Muñoz-Rivas, Graña, O’Leary, & González, 2009), and largescale international meta-analyses in this area all offer overwhelming continued support for worldwide rate estimates consistent with this number and even higher (Krahe, Tomaszewska, Kuyper, & Vanwesenbeeck, 2014; Krahe et al., 2015; Spitzberg, 1999; Stoltenborgh, van Ijzendoorn, Euser, & Bakermans-Kranenburg, 2011). In addition to these more traditional conceptualizations of sexual aggression, there is growing awareness of modern manifestations in the form of technology facilitated sexual aggression (e.g. Henry & Powell, 2016a). While prevalence studies in this area are in their infancy, there is some work supporting rising rates of these types of unwanted experiences among women (McGlynn & Johnson, 2019; Powell, Henry, & Flynn, 2018) as most commonly perpetrated by men (Powell, Henry, Flynn, & Scott, 2019). The body of work discussed here collectively indicates a pattern of sexual aggression as a continued problem for women which, while long-standing, is also evolving in present day society.

But why do some men perpetrate sexual aggression against women? Despite a history of theoretical and empirical work in multiple disciplines, this question remains. As already mentioned, we treat the construct of sexual aggression as a continuum of unwanted sexual attitudes, interests, and behaviors. Such behavioral manifestations include all acts of unwanted sexual contact from sexual harassment up to and including rape. We also account for modern online manifestations in our understanding of sexual aggression. In turn, it can be said that the breadth and depth of complexity of

this phenomenon is necessarily reflected in the psychological theories aimed at capturing an understanding of it, as well as in the range of measures that have been put forward to that end. Thus, as a starting point for our contribution to answering the question posed at the beginning of this section, we next review what is already known regarding both the theory behind, and measurement of, men's sexual aggression. We first offer explanations of the content of each theory along with brief individual evaluations. This will be followed by a discussion of the nature and content of common measures, and an overall evaluation of these in relation to one another with an emphasis on gaps and limitations, as this is the particular area the present work aims to contribute a novel addition to.

Theories of Male Sexual Aggression. In their excellent review, which focuses on rape and rapists in particular with a mind to treatment, Gannon, Collie, Ward, and Thakker (2008) outline and evaluate four main types of etiological theories for explaining sexual aggression: taxonomies, rehabilitation theories, single factor theories, and multi-factor theories (see also Ward & Hudson, 1998 for an earlier tripartite set of categories explaining this type of behavior, and Anderson, Cooper, & Okamura, 1997 for a review of attitudes towards rape). These four categories of theory, or levels of analysis, are detailed below and represent a breadth of conceptual complexity which has developed over time along with our understanding of sexual offending - from the fairly simple early taxonomies to more recent multifactorial theories which are inclusive of an increasing number of known

correlates and influences. A summary of the section to follow, which will outline these theories in detail, can be found in Figure 1 and is organized as a rough timeline from earliest to most recent.

Taxonomies can be defined as descriptive classification systems, which aim to reduce offender heterogeneity into smaller units, in order to differentiate rapists based on their hypothesized motives, as derived from elements of crime scenes (e.g., motives of power vs anger, Groth, Burgess, & Holstrom, 1977; motives that are sexual, aggressive, impulsive, or concern sexual diffusion, Seghorn & Cohen, 1980). The early taxonomies cited above were generally based in psychodynamic theory, and have been criticized for their subjectivity, lack of empirical validity, and inability to capture rapist heterogeneity (Knight, Warren, Reboussin, & Soley, 1998). However, they were useful as a first attempt to systematically examine these phenomena. A more recent taxonomy is the Massachusetts Treatment Center Rapist Typology: Version 3 (MTC: R3; Knight & Prentky, 1990; based on the earlier theory by Cohen, Seghorn, & Calmas, 1969). This typology lays out nine rapist types: opportunistic, subdivided into high and low social competence; pervasively angry; sexually sadistic, subdivided into overt aggression and muted aggression; sexually non-sadistic, subdivided into high and low social competence; and vindictive, subdivided into high and moderate social competence. These types have the strength that they have been subjected to lengthy and ongoing empirical validation to date. However, in this process some problems have been found with identifying evidence for the existence

of each of them, and like earlier taxonomies, they are all lacking in an underlying etiological account that explains rapists' behavior (Gannon et al., 2008).

Rehabilitation theories (also known as micro-theories), focus essentially on *how* offending comes to occur. These descriptive theories specify the process in terms of core cognitive, behavioral, volitional, and contextual factors. They were developed from analyses of offense characteristics, as well as firsthand offender descriptions and accounts of offence acts (offence chain processes). Two major theories in this category are the Relapse Prevention Model, a form of abstinence failure prevention (Laws, 1989; Pithers, 1990; Pithers, Marques, Gibat, & Marlatt, 1983); and the Self-Regulation Model (Ward & Hudson, 1998), which combines self-regulation theory and empirical evidence of offense processes gleaned from rapist interviews. In the relapse prevention model, sexual aggression is viewed as the result of offenders' risky cognitions, emotions, and behaviors interacting with a self-regulation deficit. Transplanted directly from work in the areas of addiction and alcohol misuse, based on intuition that it would be applicable in the realm of sexual aggression rather than empirical evidence, this model is criticized for offering only a single pathway to aggression and assuming that all offenders are motivated to change, but simply lack the self-regulation skills to do so (Gannon et al., 2008).

The Self-Regulation model of relapse, on the other hand, characterizes offense related behavior as goal directed, but this can be either

active or avoidant and thus does not assume offender inhibition motives. Additionally, in this model, offenders are understood to employ strategies (either consciously or unconsciously) that are representative of three possible self-regulation styles, including active regulation, passive regulation, and mis-regulation. In combining strategy and style, there are thus four resulting types of offenders in this model: avoidant-passive, avoidant- active, approach- automatic, and approach- explicit. Further work based on the self-regulation model and offence process modeling (Polaschek & Hudson, 2004; Polaschek, Hudson, Ward, & Siegert, 2001) has yielded three possible main pathways to offending. These are positive affect, sexual gratification, and non-sexual, and strengthen the model and our understanding overall by allowing for multiple, partitioned, and/or fluid offender motives. Despite these advantages, both micro- theories cited here (rehabilitation and self-regulation) again suffer from an inability to robustly explain the etiology of sexual aggression (Gannon, et al., 2008).

Single Factor theories each offer an *individual* underlying cause as their explanation of sexual aggression. These theories and their respective proposed causes of male sexual aggression include psychodynamic theory (i.e., caused by character disorders: e.g. Freud, 1905/1953), feminist theories (i.e. caused by patriarchal values and paternalism: e.g. Burt, 1980; Brownmiller, 1975; Griffin, 1979; Herman, 1990; Murnen, Wright, & Kaluzny, 2002; Russell, 1975, 1984, 1988; Ward, 1995), evolutionary theories (i.e. caused by ancestral history and mating strategy: e.g. Ellis, 1989, 1991, 1993;

Malamuth & Heilman, 1998; Quinsey & Lalumière, 1995; Shields & Shields, 1983; Symons, 1979; Thornhill & Palmer, 2000; Thornhill & Thornhill, 1992), and social-cognitive theories (i.e. caused by the interaction of memory content and structure, cognitive processing, and cognitive products to create schemata that then contribute to the misinterpretation of the world in a rape supportive manner: e.g. Fisher & Beech, 2007; Malamuth & Brown, 1994; Polaschek & Gannon, 2004; Ward, 2000). As all the single factor theories indeed rely on a *single* factor, they are inherently limited in their ability to provide a comprehensive etiological explanation for sexual aggression, although they strengthen our understanding by offering theory-based avenues, however varied in coherence, for empirical exploration of sexual aggression. For example, while we know now that Freudian accounts of sexual aggression are not supported, they opened the scientific discussion on what was otherwise a taboo subject, allowing for the development of the range of more plausible and useful theories discussed here.

Perhaps more useful, however, are the multi-factor theories, which attempt to offer more comprehensive explanations via the combination of single factors believed to interact to cause *favorable circumstances* under which sexual aggression is likely to occur. These theories include integrated theory (Marshall & Barbaree, 1990; Marshall & Marshall, 2000), the quadripartite model (Hall & Hirschman, 1991), the confluence model of sexual aggression (Malamuth, 1986, 1996), and the integrated theory of sexual offending (Ward & Beech, 2005; Ward, Polaschek, & Beech, 2006).

One of the earliest multi-factor theories of interest, Marshall and Barbaree's (1990) integrated theory, is somewhat less complex than those to come and hinges on the specific period of adolescent development. The crux of the theory is the interaction at this time of life between four factors relating to the male ability to inhibit aggression associated with sex, which include influences and vulnerabilities in the domains of the biological, developmental, socio-cultural, and situational. Although fairly parsimonious, this theory completely neglects sexually aggressive behavior which develops outside of the adolescent period, thus failing to account fully for offender and offense heterogeneity. Strengths include the fertility for further research it has provided.

A second relatively simple multi-factor theory is Hall and Hirschman's (1991) quadripartite model of sexual aggression. This used existing theory and evidence from the time to posit four subtypes of rapists and their corresponding treatment needs, based on the most dominant causal factor theorized to drive the given aggressor (which were derived individually from developmental experience). The core factors outlined include physiological sexual arousal, cognitive distortions, affective dyscontrol, and personality traits. The first three of these were conceptualized as situational factors, while personality was considered a trait factor. Where one of these four was theorized to be the primary drive in each aggressor, it was also thought to have a synergistic effect on the remaining three factors, amplifying their influence on a given man's likelihood to offend. Additionally, each man was

thought to have personal inhibitors to sexual aggression, which could be counteracted when the perceived benefits of sexually aggressive behavior outweighed the costs. Some strengths of this theory are its ability to explain offense heterogeneity, account for men who share qualities with rapists but do not offend, and acknowledgment of the interaction between personal and situational characteristics. However, it is not always entirely clear in defining its core concepts (Gannon et al., 2008).

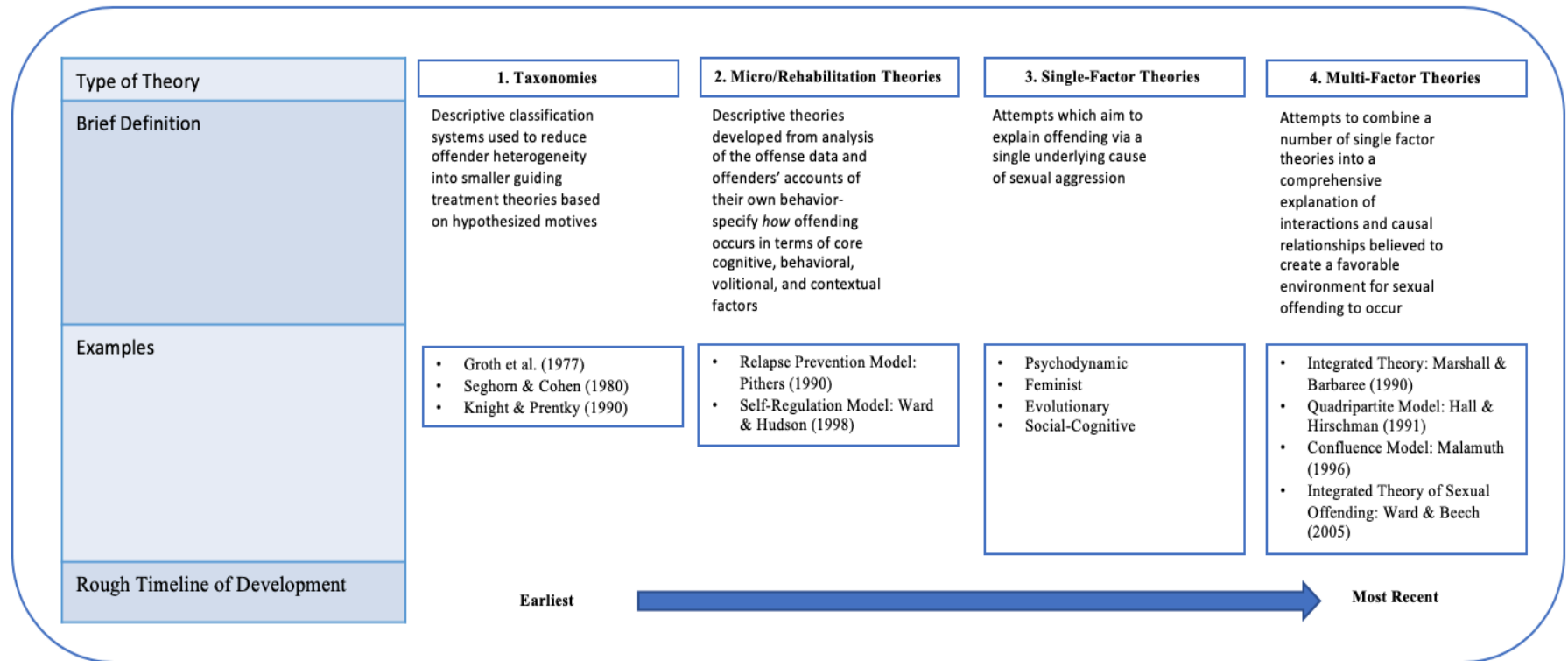
The confluence model (Malamuth, 1996) aims to reconcile evolutionary and feminist perspectives on sexual aggression in one logically coherent explanation. In doing so, this theory offers two levels of causation for sexual aggression: ultimate (*why* mechanisms exist), and proximate (*how* mechanisms develop and play out in practice). The ultimate cause of sexual aggression is theorized to lie in an evolutionary male preference for impersonal sexual encounters, and can lead to two pathways for offending, the first of which is the promiscuous, impersonal sex pathway. When efforts to engage in this type of encounter are thwarted, the second pathway, hostile masculinity, is more likely to lead to coercive strategies. Additionally, proposed proximate causes are underlaid by four key assumptions and six relatively concrete risk factors. These assumptions are that sexual offending (1) results from the risk factors (outlined below), (2) the risk factors are predictive of male-female offending in particular, (3) the factors are able to generalize to explain other aggressive and hostile behavior towards women, and (4) environmental and cultural factors will influence an individual man's

likelihood to sexually aggress. Malamuth's six risk factors include rape tumescence, hostile masculinity, hostility directed at women, offence supportive attitudes, antisocial personality characteristics, and sexual experience (opportunity). The tenants of this theory have been replicated in the years since it was first posited, largely by the original authors, and it is predictive of behavior over time. It is also strengthened by unifying two previously disparate areas of theory in sexual aggression- feminist and evolutionary. However, it has relied only on non-incarcerated populations and men who committed their crimes in early adulthood in its development. Further, it is arguably complex and yet also lacks enough explication between its various factors (Gannon et al., 2008).

The final and most recent multi-factor theory is Ward and Beech's (2005) integrated theory of sexual offending, which uniquely combines the tenants of many of the previously covered theories under a single, unifying etiological explanation of sexual aggression. In this model, three causal factors are believed to interact continuously and dynamically to produce aggression: biological factors, proximal and distal ecological niche factors, and three specific neuro-psychological systems (including motivation-emotion, action-control, and memory- perception). In other words, "the heterogenous clinical symptoms or acute dynamic risk factors empirically associated with sexual aggression (i.e. regulatory deficits, deviant sexual arousal, social difficulties, and offense supportive beliefs) are produced by various combinations of biological, ecological, and neuropsychological

factors...sexual aggression is hypothesized to emerge from a complex arrangement of individual factors, and their proximal and distal environments” (Gannon et al., 2008, p. 995). This theory is strengthened by, as the name suggests, integrating the body of other theoretical work from the area of sexual aggression. It is also able to account for heterogeneity in offenders and offenses and has the potential for fertile generation of research as well as clinical treatments. The primary criticisms include the need for additional empirical validation and clarification of some concepts (Gannon et al., 2008)

Figure 1.
Summary of Theories of Sexual Aggression



Existing Measures of Male Sexual Aggression. The theories outlined above demonstrate the complexity of this extremely heterogeneous phenomenon, and the necessary emergence over time of increasingly holistic contributions to our understanding. We now turn to the means of empirical measurement that have been employed to date in our attempts to capture male sexual aggression perpetration against women. Critically, existing self-report, behavioral, and other lab-based measures of male sexual aggression vary in their proximity to the act of sexual aggression itself and whether there is a 'victim' present, as well as their explicitness and directness of enquiry (for a review with an emphasis on lab-based paradigms, see Davis, et al., 2014). The existing measures will not all be covered in depth individually, but this section will aim to give the reader a broad idea of what is available, and the respective strengths and limitations of various categories of existing measurement. Here, we will first review common self-reports, then go on to delve into other types of 'precursor' measures, leading lastly to behavioral measures that all focus on attempting to tap and predict sexual aggression in particular¹. Excluded from the present discussion are measures of attitudes and beliefs about and related to sexual aggression (such as rape myth acceptance and hostility towards women, e.g. Anderson, et al., 1997; Lonsway & Fitzgerald, 1994, 1995; Suarez & Gadalla, 2010), as these can be categorized separately and do not directly inform the

¹ In addition to these, the date rape decision latency task (Marx & Gross, 1995) can be seen as a hybrid of self-report and behavioral measures.

development of a new paradigm, a major aim of this thesis. A summary of the measures covered in this section can be found in Figure 2.

Beyond retrospective studies conducted with convicted populations, we are reliant to some degree on self-reports to measure in any attempt to predict male sexual aggression. Common self-reports can themselves be largely divided into hypothetical and retrospective in nature and vary in the specific types of sexual aggression they aim to capture, from sexual harassment up to and including rape. Davis et al. (2014) classify the hypothetical scenario measures as “precursors to sexual aggression” (along with several other measure types outlined briefly below). Two common hypothetical measures of this kind which tap intentions are the attraction to sexual aggression inventory (ASAI; Malamuth, 1989), and the likelihood to sexually aggress scale (LSH; Pryor, 1987). As is typical of this category, they each pose hypothetical scenarios which include the possibility to sexually aggress and ask male respondents how they believe they would behave in such a scenario. On the other hand, retrospective self-reports, as the name implies, ask respondents about actual past behavior. Examples include the aggressive sexual behavior inventory (Mosher & Anderson, 1986), designed to examine sexual aggression in dating situations, and the sexual experience survey perpetration scales (Koss et al., 2007; Koss & Gidycz, 1985), designed to broadly tap all instances of perpetration committed by respondents both in the past 12 months and since the age of 14. This last is considered the gold standard among self-report measures and has both long

and short versions in use. The terminology used is behavior specific and concerns both acts and tactics, while avoiding terms such as ‘rape’ which may be differentially interpreted and defined by respondents.

Other precursor measures include physiological sexual arousal (assessed via penile circumference/tumescence; Abel, Becker, Blanchard, & Djenderedjian, 1978; Earls & Proulx, 1986), interest in sexually aggressive stimuli (assessed by unobtrusively recorded viewing time; George & Marlatt, 1986), misperceptions of women’s sexual interest (assessed via ratings; Abbey, 1982; Abbey, Cozarelli, McLaughlin, & Harnish, 1987), and implicit associations (assessed via automatic associations in an IAT; Rudman & Mescher, 2012; Zubriggen, 2000). Like common self-reports, these generally do not employ the presence of a ‘victim,’ with the exception of some variations of the sexual interest misperception paradigm, which is itself a type of self-report.

Turning now to behavioral measures of sexual aggression, which generally do employ at least the perception that there is a ‘victim’ involved, we will review the conceptual and methodological premises underlying a range of lab-based measures, including sexual imposition paradigms (Hall, DeGarmo, Eap, Teten, & Sue, 2006; Hall & Hirschman, 1994; Hall, Hirschman, & Oliver, 1994; Mitchell, Angelone, Hirschman, Lilly, & Hall, 2002; Rudman & Mescher, 2012), the integrated sexual imposition paradigm (Parrot, et al., 2012), the computer harassment paradigm (Diehl, Rees, & Bohner, 2012; Siebler, Sabelus, & Bohner, 2008), the denial of access

paradigm (Bushman, Bonacci, van Dijk, & Baumeister, 2003), and the interpersonal touching paradigm (Pryor, 1987). These arguably range as listed from least to most intrusive, although all involve some of this quality directed at a real or perceived victim.

The first and second categories of these laboratory behavioral measures - sexual imposition paradigms (e.g. Rudman & Mescher, 2012) and the integrated sexual imposition paradigm (e.g. Parrot et al., 2012) - each involve variations of the same basic methodology: participants are asked to choose from sexual-erotic, sexually-violent erotic, and/or neutral-control stimuli (usually in the form of still images, but sometimes video), and ostensibly send their choices to a woman. This woman has often been depicted as having a strong dislike for pornography. Thus, sending erotic content constitutes imposing unwanted sexual imagery on her. Differences in implementation of these paradigms most often hinge on the type and combinations of stimuli choices employed, and the integrated version represents a convergence of this methodology with the field of work on bystander interventions by way of employing a male confederate who acts as a “peer,” and who may or may not endorse imposition behavior.

Similarly, the computer harassment paradigm (Diehl et al., 2012; Siebler et al., 2008) employs the perception of the presence of a female ‘victim’ who is purportedly to receive (potentially harassing) content stimuli chosen by male participants. In this variation, however, the content choices come in the form of possible messages to be sent within a computerized

messenger setting and include choices of sexist jokes (representing gender harassment) and/or sexist comments (representing unwanted sexual attention) along with neutral choices. Participants attempt to accrue points based on partner responses to the content they send, and this 'partner' invariably gives negative feedback to sexist material. Thus, in this paradigm non-consent is mirrored in that men know that the material they are sending is unwanted when it is sexist in nature. This paradigm is of particular interest in the present digital age, as coercive sexual experiences that are specific to an online context represent a new, and likely growing area, fertile for exploitation and abuses of power (e.g. McGlynn & Rackley, 2017).

Lastly, in both the denial of access (e.g. Bushman et al., 2003) and interpersonal touching (e.g. Pryor, 1987) paradigms, male participants interact with a live female 'victim' in the form of a confederate. The first of these involves the confederate woman denying participants access to sexually explicit material by refusing to read aloud a passage of sexual content. Participants then have the opportunity to engage in punitive measures against the woman in the form of determining whether she should be paid for her participation and rehired for future studies. The second of these two, the interpersonal touching paradigm, relies on the idea of attributional ambiguity- male participants are put in a social situation with a woman that gives them a sense of power over and excuse to touch her (teaching the woman, who is described as a novice and asked by the experimenter to "fully cooperate," how to putt a golf ball). Left alone for this

purpose for fifteen minutes of instruction, outcomes include confederate ratings of the men's touching behavior in various conditions, as well as experimenter coding thereof.

In attempting to evaluate measurement of sexual aggression, an approach which takes the whole field of existing measures into account relative to one another is employed here, as there is so much variability in how researchers approach and attempt to tap this delicate construct. The range of attempts to empirically capture the phenomenon of men's sexual aggression reflect the ethically sensitive nature of the task as well as conceptual complexity of the construct. Indeed, measurement in this area represents a bit of a paradox in that to directly measure sexual aggression (for example, in situ) would be entirely unethical, and therefore analogues must be employed, which necessarily are somewhat removed approximations of the actual phenomenon of interest. In other words, the closer we come to measuring the construct itself, the less ethically viable the paradigm- necessitating regaining some distance- while with more ethical safeguards and constraints in place we become more and more removed from measuring actual sexual aggression. Additionally, these approximations naturally become increasingly removed with increasing extremity of the particular manifestation of interest along the continuum of sexual aggression, producing somewhat of a moving goal line. Of course, the importance and impact of the problem makes this a goal worth continued pursuit.

Each of the categories of measures discussed in this section includes its own relative strengths and limitations, especially as relates to reliability, validity, and ethical concerns. Self-report measures of course suffer from common problems associated with this category (e.g. impression management, misunderstanding of items, varied interpretations of likert-scale points, ability to honestly and accurately introspectively reflect), especially as pertains to sensitive topics, such as response bias. Additionally, the most direct of these measures, the SES-perpetration scale, cannot be employed under certain ethical codes (including that of the British Psychological Association), as asking about illegal behaviors has been determined to represent undue risk to participants. The remaining available self-reports are thus more artificial in that they are based on hypothetical scenarios, intentions, and/or inclinations rather than capturing actual reported behavior. However, there are certain benefits to using self-reports in this context, including an associated increase in experimental control and reliability, internal validity, and avoidance of many of the ethical issues associated with designing more direct behavioral measures.

The range of other precursor measures mentioned here have similar strengths to those associated with self-reports mentioned above, in addition to concrete operational definitions of outcomes (e.g. viewing time, physiological responses). However, there are individual problems with each of these as well. For example, in the seemingly most intuitively valid of these paradigms - penile circumference measurement in response to rape stimuli-

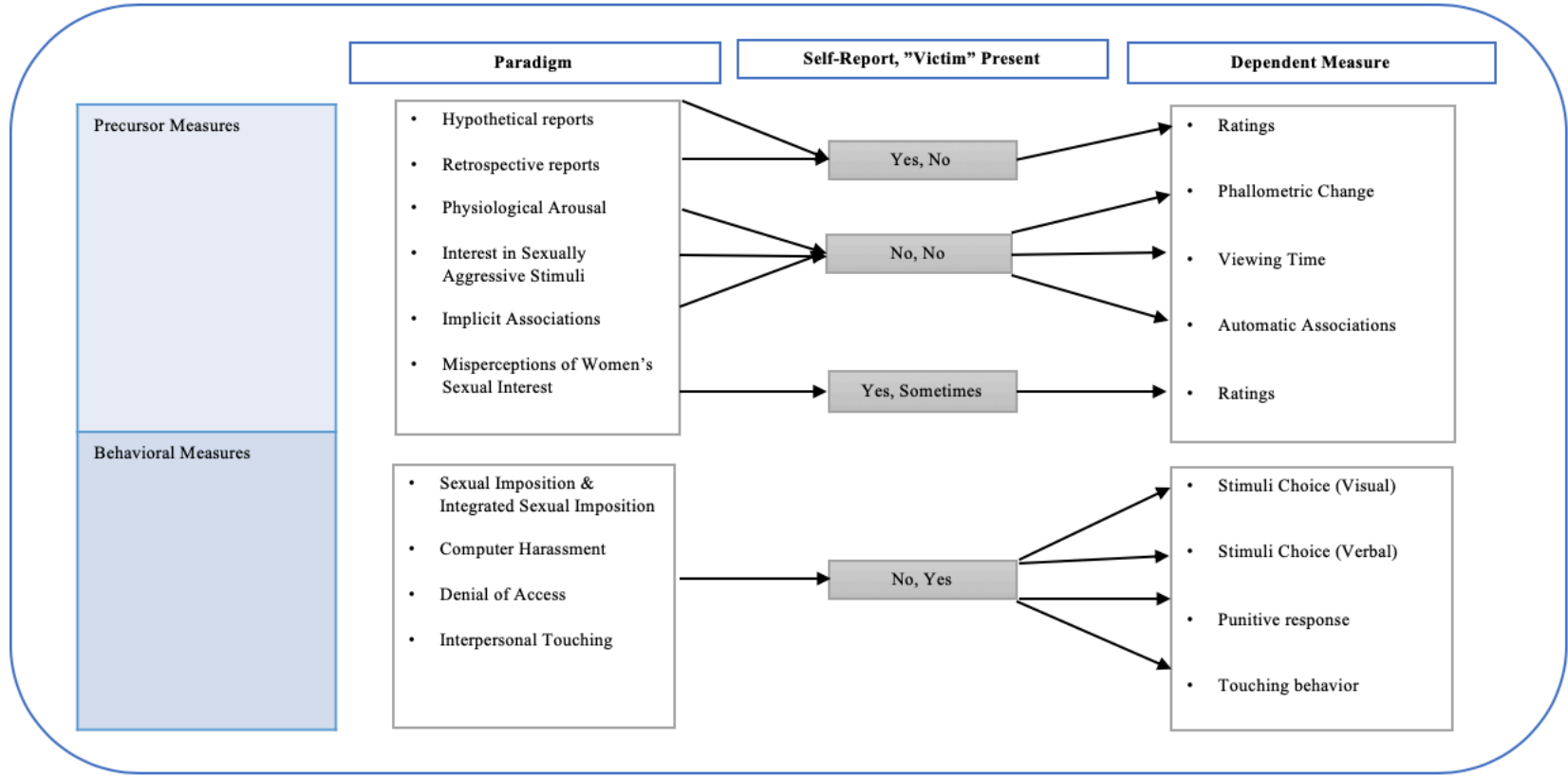
research has not been able to reliably and consistently discriminate between rapist and non-rapist populations, with rapists still showing preference for consensual over non-consensual stimuli overall (Baxter, Barbaree, & Marshall, 1986; Murphy, Krisak, Stalgaitis, & Anderson, 1984). However, this measure is especially strengthened by avoiding issues of response bias completely. On the other hand, the use of implicit associations, which also represents an attempt to avoid response bias, arguably sit on the other end of the spectrum from penile measures when it comes to an intuitive assessment of its relationship to the real-world behavior of interest. Finally, both the paradigms based in interest in sexually violent stimuli (as measured by viewing times) and misperceptions of women's interest (as measured by participant ratings) lack an explicit or implicit link to men's behavior or intentions and are in this way especially far removed from aggression itself. Put simply, while each existing precursor measure discussed has certain strengths, they also come with some major trade-offs (e.g. response bias, artificiality).

Finally, lab based behavioral paradigms, while arguably closest to measuring the construct of interest, all have been subjected to the predominant and recurring criticism that they present problems in lacking mundane realism and lack of correspondence with "real world" behavior. Additionally, laboratory paradigms come with some major ethical considerations for the protection of participants, including the need to address and minimize the impacts of deception, "inflicted insight," and

potential priming of aggressive behavior through participation in studies (Davis et al., 2014). Additionally, where a confederate woman and/or female researcher is used in dyadic interactions, such as in the interpersonal touching paradigm and the main lab study presented in the work done in this thesis, there is a strong need for protecting her as well. I would argue that while a female researcher has the autonomy and foresight to design studies which incorporate elements of self-preservation and protection, the basic ethics of confederate studies in particular are questionable when they put a (however consenting) woman with less than full power over the situation in a position of vulnerability, as in the interpersonal touching paradigm in particular.

Despite the issues associated with individual measures, the importance of the problem demands that research employ creative means of tapping the construct, and compelling arguments have been made that the strength of existing measures, particularly lab measures, lies in their internal validity and ability to engage experimental and psychological realism, as opposed to only focusing on mundane realism (Anderson & Bushman, 1997; Berkowitz & Donnerstein, 1982; Davis et al., 2014; Mook, 1983). Through the use of triangulation in measurement which strategically employs the relative strengths of the measures discussed above, we have been able to gain insights into this issue. However, more naturalistic measures which meet ethical standards of practice are still very much needed, an aim addressed in the body of work presented in this thesis.

Figure 2.
Summary of Existing Sexual Aggression Measures



Dehumanization & Objectification. The fields of dehumanization and objectification represent the second large research groups that this thesis aims to integrate within our broad examination of men's sexual aggression. Dehumanization is defined throughout this thesis as the process of perceiving and/or treating people as less than fully human.

Dehumanization is conceptually related to objectification, which can be defined most simply as perceiving and/or treating people as things. As objectification can be viewed as a particular manifestation subsumed under the overarching concept of dehumanization, it is treated as such for the present purposes. Indeed, there have been calls for validating, and attempts at creating, an integrated theory concerning the two concepts, although this remains to be fully tested (Gervais, Bernard, Klein, & Allen, 2013). The following sections review the most relevant theoretical literature concerning what constitutes and underpins our understanding of dehumanization and objectification, especially in terms of the motivated engagement in these processes when directed at others.

Dehumanization of Others. Dehumanization can occur such that others are seen either as similar to being non-human, or more subtly, less than fully human. The process of dehumanization has been noted by several authors as representing on the surface a clear categorical inaccuracy of inference, despite being remarkably widespread (Gervais et al., 2013; Haslam & Loughnan, 2014). While much of the existing work on dehumanization is rooted in historical and extreme inter-group processes

and/or conflict (Bar-Tal, 1989; Schwartz & Struch, 1989), a contemporary understanding of dehumanization can be broken down into four primary conceptual frameworks which tend to address more ‘everyday’ dehumanization (for a more detailed review, see Haslam & Loughnan, 2014). These include theory based in inhumanization (Leyens, et al., 2001, 2003, 2007), the dual model of dehumanization (Haslam, 2006; Haslam, Loughnan, & Holland, 2013), an account based on the attribution of theory of mind/mind perception (Epley, Schroeder, & Waytz, 2013; Kozak, Marsh, & Wegner, 2006), and the stereotype content model (Fiske, 2013; Fiske, Cuddy, Glick, & Xu, 2002; Harris & Fiske, 2006). Additionally, there has been a call in recent years for a return to examination of blatant dehumanization (Kteily, Bruneau, Waytz, & Cotterill, 2015). While the ‘everyday’ dehumanization covered in the four primary models mentioned above is typically measured via self-reports of attributions and perceptions regarding certain relevant traits and/or emotions to a target, there are some exceptions. Specifically, some measurement conducted in support of the stereotype content model relies on neuroscience methods, and the newly emerging work on blatant dehumanization has developed an image-based means of tapping these consciously engaged in forms of the construct.

Inhumanization (Leyens et al., 2001) occurs when an out-group is ascribed less uniquely human traits or emotions, or those which differentiate humans from animals (e.g. intellect), *relative* to an in-group. This conceptualization is especially important in that it was the first to identify a

potential for dehumanization that can occur independent of any active negative evaluations of the out-group, and clearly define how this might happen. Secondly, infrahumanization is not predicated upon existing solely specific to extreme contextual circumstance and blatant denials of humanness, such as those which occur in war and torture.

In the dual model of dehumanization, Haslam (2006) extends and arguably encompasses the earlier theory proposed by Leyens. In addition to the animal-human distinction previously discussed in that work (embodied by human uniqueness traits), this model proposes a second way of understanding humanness: as operating in opposition to inanimate objects and embodied by those traits and emotions that are essential to human nature (e.g. emotion). Human uniqueness includes such attributes as intelligence and rationality, and examples of human nature traits are emotionality and warmth. Denial of human uniqueness traits results in a type of dehumanization referred to as 'animalistic' which likens the person in question to being relatively more similar to animals, and denial of human nature traits results in 'mechanistic' dehumanization which likens them as closer to inanimate objects or robots. This theory is strengthened by the fact that it is better able to explain the wide variability and range of qualitatively different dehumanization processes and experiences than infrahumanization alone, from the blatant and extreme forms found in war to the objectification of women.

The mind perception account of dehumanization (Kozak et al., 2006), is quite similar to Haslam's (2006) dual model account in many ways but can be situated within broader mind perception research (Gray, Gray, & Wegner, 2007; Waytz, Gray, Epley, & Wegner, 2010). Dehumanization is considered to occur when mental states are denied to another person, constituting 'dementation.' This can happen along two dimensions which determine how we ascribe mentality to external entities: denial of agency (which maps onto animalistic dehumanization by excluding mental capability traits) and/or denial of experience (which maps onto mechanistic dehumanization by denying core humanness traits).

Next, the stereotype content account of dehumanization (Harris & Fiske, 2006) is based in the proposed division of group stereotypes along the dimensions of warmth and competence, rather than a specified definition of humanness, as seen in the models presented thus far. This division results in a hypothetical grid of four possible combinations of associated stereotypes that can be applied to categories of people (high warmth-high competence; high warmth- low competence; low warmth- high competence; low warmth- low competence), and thereby defines the type of persons most likely to be dehumanized (e.g. those seen as low in both warmth and competence, such as drug addicts). Dehumanization of others occurs when the social-cognition, or spontaneous consideration of the mentality of another, we typically apply to human beings fails to act automatically when these certain others are

perceived, and people who fall into this low-low category (e.g. the homeless) are expected to be most often associated with reactions of disgust.

Lastly, proponents of a blatant dehumanization model (Kteily, et al., 2015) argue for a need to re-orient the field of research, which has focused a great deal in recent years on everyday and more subtle forms of dehumanization (see above), towards its theoretical roots in more blatant forms of dehumanization in intergroup relations (Fincher, Kteily, & Bruneau, 2018; Kteily & Bruneau, 2017a). Specifically, it calls for (and has begun to implement) increased empirical examination of dehumanization in regard to those most negative intergroup human interactions- in other words, examining explicit dehumanization once again in more extreme contexts of hostility, conflict, and violence. These authors have put forward an overt measure of dehumanization using the popular “ascent of man” imagery to capture and assess this blatant, conscious, and hierarchical form of the phenomenon, arguing that it represents a means of complementing and/or supplementing existing subtle ways of thinking about and assessing dehumanization (Kteily et al., 2015). In support of the relevance of this, blatant dehumanization has been shown to be uniquely predictive of a range of attitudinal and behavioral consequences relevant to ingroup-outgroup relations, including as well as extending beyond those accounted for by more subtle forms of dehumanization (e.g. Kteily et al., 2015; Kteily & Bruneau, 2017b; Kteily, Hodson, & Bruneau, 2016; Linden, Bjorklund, & Backstrom, 2016).

Thus far, this section has covered four major models of dehumanization, as well as arguments for emphasizing more blatant forms of dehumanization. These models include infrahumanization (Leyens et al., 2001), the dual-model (Haslam, 2006), theory of mind (Kozak et al., 2006), and the stereotype content model (Fiske, et al., 2002). While each of these has its own strengths, illuminating various avenues through which people may engage in motivated dehumanization of others, this thesis aims to capture dehumanization of women generally, as well as objectification in particular. Therefore, the present work favors dehumanization as defined via the dual-model (Haslam, 2006), which is designed to capture both everyday forms of animalistic and mechanistic dehumanization- under which objectification also conceptually falls, and which neatly incorporates the ideas underpinning infrahumanization.

The dual model seems most theoretically relevant to dehumanization of women that occurs in the context of sexual aggression. Arguably denial of mind-based theories could also apply in this context, but do not cover all of the facets of dehumanization we are interested in. Additionally, blatant dehumanization and the stereotype content model could apply to sexual aggression, but these focuses in large part on (in-out) group membership and are likely fallible to response bias and impression management when the group in question is women. They are also less relevant to a particular woman, as would be the case in instances of sexual aggression. Thus, we

consider the dual model most compelling for application to sexual aggression, with consideration of our present aims.

Objectification of Others. In contrast to dehumanization theory, much of our understanding of objectification is rooted in gender studies, both theoretical and empirical. Feminist theory (Bartky, 1990; Dworkin, 1987; MacKinnon, 1993) has addressed the objectification of women for some time, and in doing so has largely focused on the process of stripping women of personhood. Of particular interest among feminist theories is the conceptualization of objectification posited by Nussbaum (1995, 1999). Nussbaum outlines a multi-dimensional perspective which includes seven distinct ways of engaging in objectification, focusing on parsing out what exactly is involved in treating a person as an object. Specifically, these include instrumentality (the 'object' is seen and/or treated as a tool for the purposes of the objectifier), denial of autonomy (the 'object' is seen and/or treated as lacking autonomy and/or self-determination), inertness (the 'object' is seen and/or treated as lacking agency and/or activity), fungibility (the 'object' is seen and/or treated as interchangeable with other objects, either of the same or different types), violability (the 'object' is seen and/or treated as lacking boundaries integrity, therefore permissible to harm), ownership (the 'object' is seen and/or treated as something which can be owned, bought, or sold), and denial of subjectivity (the 'object' is seen and/or treated as though their experiences and feelings, if acknowledged at all, need not be taken into account). Various combinations of these can occur in any given experience,

resulting in a theory with the potential for elucidating a range of objectification processes that vary both quantitatively (e.g. severity of treatment) and qualitatively (e.g. type of treatment).

Although other theoretical and empirical perspectives on the motivations behind objectification exist in the psychology literature (e.g. Goldenberg, 2014; McKinley & Hyde, 1996; Strelan & Hargreaves, 2005; Tyler, Calogero, & Adams, 2017; Wang & Krumhuber, 2017), formalized theory and much of the resulting empirical work in this area is predominately underlaid by the propositions of Objectification Theory (Fredrickson & Roberts, 1997), which aims to broadly situate women's experiences in their socio-cultural context. Objectification theory posits that women who live in sexually objectifying environments such as our modern society learn through experiences, with sources ranging from entities such as the media to the interpersonal (e.g. the male gaze; Monk-Turner, et al., 2008; Mulvey, 1975), to act adaptively such that they are their own initial self-surveyors. In other words, cultural exposure socializes women to view themselves as objects to be evaluated based on appearance. According to objectification theorists, this is accomplished through internalization of external cultural ideals, ultimately leading to self-objectification via three key processes: internalization of appearance standards, valuing appearance over competence, and body surveillance. Through intermediary appearance anxiety, body surveillance, body shame, and diminished capacity for peak motivational states (flow), women who self-objectify are expected to

experience a multitude of negative results including depression, eating disorders, and sexual dysfunction. Objectification is typically measured with self-reports designed to tap either state (elicited) or trait (chronic) self-objectification.

While useful and generative, objectification theory thus largely focuses on the processes and outcomes regarded as associated with *self* - objectification, neglecting to a great extent engagement in objectification of others. Evidence of this neglect is found in researchers simply adapting existing self-objectification self-report measures to be worded in terms of evaluating an external target. However, some work does address the issue, much of which links the conceptualization of objectification with dehumanization and which is consistent with our conceptualization of objectification being subsumed under the broader concept of dehumanization (Cikara, Eberhardt, & Fiske, 2011; Gervais et al., 2013; Gray & Wegner, 2009; Gruenfeld, Inesi, Magee, & Galinsky, 2008; Haslam et al., 2013; Heflick & Goldenberg, 2009; LeMoncheck, 1985; Loughnan et al., 2010b; Loughnan, Pina, Vasquez, & Puvia., 2013; Rudman & Mescher, 2012; Vaes, Paladino, & Puvia, 2011; Vasquez, Ball, Loughnan, & Pina, 2017), thus bringing us full circle to the inter-related way these constructs are understood in the present work, with objectification being subsumed as a type of dehumanization.

Chapter summary

So far, this chapter has examined existing theoretical and methodological literature in the area of male sexual aggression perpetration (and the limitations thereof), as well as broad theoretical perspectives concerning dehumanization and objectification. In the next chapter, we introduce connections between these two areas of research, as well as the first empirical work conducted for this thesis in support of our two primary aims. As a reminder, these aims are (1) to explicitly examine the potential role of dehumanization and objectification in predicting men's perpetration of sexual aggression against women, and (2) to develop and validate the use of a novel, ethically appropriate and realistic, behavioral measure of men's sexual aggression.

In service of these, the directions taken in this body of work will be based both on our expectations at the outset and a complementarily flexible (e.g. data driven) approach in developing later studies in this series. Regarding aim 1, we will first establish correlational evidence of the effects of interest, followed by seeking replication and additional experimental evidence of these effects. Specifically, we expect to show both a correlational and causal relationship between dehumanization and objectification and multiple existing measures of sexual aggression. Once this is established, we will work towards aim 2 - development of our novel behavioral measure of men's sexual aggression- which we ultimately expect to also show correlational and causal relationships with dehumanization and objectification in a lab-based paradigm. Thus, this thesis will provide novel contributions to our

understanding of two important fields of study. It will do this by enhancing our theoretical understanding of these important concepts with large-scale empirical evidence, and by providing methodological advancement. Methodological advancement will in turn cyclically reinforce the confidence we have in the knowledge gleaned at a theoretical level.

Chapter 2- Insights Into Men's Sexual Aggression: Dehumanization and Objectification

The studies reported in this chapter appear largely as reported in their published form (Sex Roles; Bevens & Loughnan, 2019), with only very minor changes having been made here.

Abstract

Sexual aggression is a global, ongoing problem, and it is most often perpetrated by men against women. In a set of studies, we investigated the role of dehumanization and objectification in men's sexual aggression-related attitudes and interests toward women in general, as well as toward a specific female target. The first of our studies, with 190 heterosexual British men recruited online, established a correlational link between dehumanization and rape proclivity. Dehumanization was also related to unfavorable attitudes toward rape victims. Critically, our results largely held when controlling for several variables with previously established relationships to sexual aggression. Results for objectification were less consistent. Our second study sought to experimentally manipulate the dehumanization of a woman and measures its effect on sexual aggression attitudes and interests. Results from 106 heterosexual British men seemed to be particularly driven by one aspect of dehumanization—the denial of human uniqueness—showing differences in correlations between experimental groups on measures of sexual aggression including rape proclivity, unfavorable attitudes toward a

rape victim, and a behavioral rape analogue task. Avenues for future research are discussed, and implications of the work include the potential for emphasizing women as people, especially through highlighting their human uniqueness, in designing effective prevention and interventions (e.g., bystander) efforts.

Keywords: Dehumanization, Sexual Objectification, Sexual Assault
perpetration, Violence, Aggression toward women, Rape

Beauty provokes harassment, the law says, but it looks through men's eyes when deciding what provokes it. -- *The Beauty Myth*, Naomi Wolf (1990)

In the era of #MeToo (<https://metoomvmt.org/>), with ever increasing prevalence of sexual aggression in the popular press and international consciousness, identifying men who may be more likely to perpetrate sexual aggression is an essential task that requires a strong base in empirical evidence. Recently (Reston, 2018), compelling and emotionally provocative testimony of the experience of a sexual assault from Dr. Christine Blasey Ford was delivered to the United States senate judiciary committee in relation to the (ultimately successful) confirmation of Brett Kavanaugh to the Supreme Court. The widely viewed broadcast of her words drove home for many how common these types of experiences continue to be in the lives of women, echoing similar testimony from Anita Hill concerning her experiences of sexual harassment, given against Justice Clarence Thomas a full 17 years earlier in 1991 (Jacobs, 2018). Although we now seem to be well aware of the problem of sexual aggression perpetration, changing it is another issue entirely that should be treated with urgency as well as scientific rigor because of its complexity and its impact on the lives of so many.

Indeed, sexual aggression continues to be a major problem across the world that disproportionately effects women and girls (Garcia-Moreno et al., 2006; Smith et al., 2017). For the purposes of this thesis, the term *sexual aggression* is used inclusively to indicate a continuum of manifestations of

unwanted sexual behaviors that cover all acts of unwanted sexual contact from sexual harassment up to and including rape. Although men can be the victims of sexual aggression and women can act as aggressors, the large and clear majority of these assaults are committed by men against women (see Basile et al., 2007; Breiding, et al., 2014; Fisher et al., 2010; Muñoz-Rivas et al., 2009; Stoltenborgh et al. , 2011; Tjaden & Thoennes, 1998; Walby & Allen, 2004), and thus men's sexual aggression is the focus of the present work. Specifically, we sought to examine social- and individual-level factors that relate to male endorsement of sexually aggressive attitudes and interests, which have in turn been shown to relate to behavioral self-reports of perpetration of sexual aggression (Abbey, McAuslan, & Ross, 1998; Abbey, McAuslan, Zawacki, Clinton, & Buck, 2001; Johnson, Murphy, & Gidycz, 2017; Malamuth, 1989; Pryor, 1987). The clarification of both social and individual factors that contribute to men's attitudes and interests regarding sexual aggression is an important and necessary task in helping better the lives of women and ultimately preventing the regular perpetuation of this type of violence against them.

Although we have long sought the answer to the seemingly straightforward question of why some men commit these assaults, the answer itself is not so straightforward, and no single unifying explanatory theory of the causes of sexual aggression dominates the existing literature. However, many attempts at such a theory have been put forward (Anderson, et al., 1997; Gannon, et al., 2008), reflecting at the meta-level the complexity

of this phenomenon. These attempts can be broken down into some general categories (see Gannon, et al., 2008, for a very useful in-depth discussion of the following works) including taxonomies (e.g., the Massachusetts Treatment Center Rapist Typology: Version 3: Knight & Prentky, 1990), micro and rehabilitation theories (e.g., the Relapse Prevention Model: Pithers, 1990; the Self-regulation Model: Ward & Hudson, 1998), single factor theories (e.g., psychodynamic theory, feminist theories, evolutionary theories, and social-cognitive theories), and multi-factor theories (e.g., the Confluence Model: Malamuth, 1996; Integrated Theory: Marshall & Barbaree, 1990; the Quadripartite Model: Hall & Hirschman, 1991; and the Integrated Theory of Sexual Offending: Ward & Beech, 2005). See Chapter 1 for more detail on these. Even the briefest examination of the range of existing ideas and data in this well debated area contextualizes the present research's necessary decision to seek the broadest possible test of our own contributions to the literature.

For example, even in relation to a single commonly cited model—the Confluence Model (Malamuth, 2003; Malamuth, Heavey, & Linz, 1996; Malamuth, Linz, Heavey, Barnes, & Acker, 1995; Malamuth, Sockloskie, Koss, & Tanaka, 1991) —debate about the ongoing need for refinement persists because it by no means accounts for all variables that have been identified as associated with sexual aggression. The benefits of an updated model have been argued in multiple ways, from the simple incorporation of additional personality factors (e.g., sub-clinical psychopathy; Abbey,

Jacques-Tiura, & LeBreton, 2011) to an overall expansion and integration of the original model in the form of an interaction model (Malamuth, Heavey, & Linz, 2013). In light of this ongoing theoretical debate in the literature on sexual aggression, which continues to consider a wide range of known associated factors and to conduct tests that control for these, it is necessary to better understand the bigger picture of this important and contested phenomenon. This holistic view is especially important when looking at factors that are novel within the literature, as done in the present work, because robust tests will ensure that new studies add constructively to the literature rather than further muddy the waters. Specifically, we examine whether dehumanization and objectification may be useful additions.

Dehumanization and Objectification

The tendency to engage in dehumanization and objectification represent two potentially important influences on sexual aggression that have thus far been relatively unexplored within this broad literature. See Chapter 1 for a more detailed exploration of these concepts than that which is provided here. *Dehumanization* is the process of perceiving and/or treating people as less than human, which can manifest in several ways (for a review see Haslam & Loughnan, 2014). Dehumanization is conceptually related to objectification, which itself can be viewed as a particular manifestation of the overarching concept, and objectification is treated thus for the purposes of this thesis. Some ways in which dehumanization can be accomplished are though treating a person as an object (as in objectification) or as an animal.

More subtly, it can be achieved by denying a given person certain human attributes (e.g., Haslam, Bain, Douge, Lee, & Bastian, 2005; Leyens et al., 2001), such as traits associated with human uniqueness or human nature. Human nature traits include those traits that can be considered core human attributes, such as emotionality and curiosity, whereas human uniqueness traits are qualities that distinguish people from animals, such as rationality and logic. The respective denial of these two groupings of traits results in two forms of dehumanization: mechanistic and animalistic (Haslam, 2006). The consequences of dehumanization are not negligible and have been shown to extend to aggression at both the group (Leidner, Castano, & Ginges, 2013) and individual (Bastian, Jetten, & Radke, 2012; Greitmeyer & McLatchie, 2011) levels.

Objectification, on the other hand and in the broadest sense, involves equating a person with a thing (Fredrickson & Roberts, 1997), although other more nuanced theoretical conceptualizations exist (Nussbaum, 1999). Objectification is an antecedent to a wide range of negative outcomes, particularly for women (Calogero, 2004; Calogero, Davis, & Thompson, 2005; Fredrickson, Roberts, Noll, Quinn, & Twenge, 1998; Guizzo & Cadinu, 2017; Moradi, Dirks, & Matteson, 2005; Noll & Fredrickson, 1998; Sanchez & Kiefer, 2007; Steer & Tiggemann, 2008; Szymanski & Henning, 2007; Tiggemann & Kuring, 2004; Tylka & Hill, 2004). Combined, the evidence from this now long-standing field of research strongly supports the conclusion that objectification is both directly and indirectly related to a multitude of negative

outcomes for women (for a review, see Moradi & Huang, 2008).

Highlighting the interrelated nature of the constructs of dehumanization and objectification, objectified targets have been shown to be denied the mental states associated with being human (Heflick & Goldenberg, 2009; Loughnan et al., 2010b), and dehumanization can occur when evaluating women who are sexually objectified (Vaes, et al., 2011). When breaking down dehumanization based on denial of human nature or human uniqueness, it has also been found that specific forms of objectification uniquely map onto these. Objectification based on sexualization of a given woman is more likely to relate to animalistic dehumanization, whereas objectification based on valuing appearance more readily relates to mechanistic dehumanization (Morris, Goldenberg, & Boyd, 2018). Furthermore, like classic self-objectification, internalization of dehumanizing traits occurs for people who are objectified, resulting in them seeing themselves as lacking in humanity (Loughnan, Baldissarri, Spaccatini, & Elder, 2017). Thus, we examine both constructs as predictors in the present work in order to parse out their relative contributions to sexual aggression-related attitudes and interests in men.

Dehumanization, Objectification, and Sexual Aggression

It is possible that sexual aggression is a relatively unexplored consequence of engaging in dehumanization in general and/or objectification in particular. Theoretically, dehumanization and objectification can be integrated neatly into existing models of sexual aggression. For example, in

relapse prevention models (Laws, 1989; Pithers, 1990; Pithers et al., 1983) these factors would represent risky offender cognitions. Turning to multi-factor theories, dehumanization and objectification can be understood in the framework of integrated theory (Ward & Beech, 2005) as experiences coherent with the memory- perception neuro-psychological system, and Malamuth's (1996) confluence model would account for dehumanization and objectification, especially state forms of these, under the core assumption that environmental and cultural factors will influence likelihood to act aggressively. In addition to theoretical consistency, there is some empirical evidence supporting the suggested link between these factors.

As we have noted, the dehumanization of others has been empirically linked to heightened aggression in general (Bastian et al., 2012; Greitmeyer & McLatchie, 2011; Leidner et al., 2013). Recent work has shown that there also exists a link between objectification and increased general physical aggression against women (Blake, Bastian, & Denson, 2017; Vasquez, et al., 2017), mirroring the link between dehumanization and aggression. People are also less likely to help an objectified woman who is the victim of intimate partner violence (Pacilli et al., 2017), which although not sexual in nature, is similarly often committed by men against women (Tjaden & Thoennes, 2000). Furthermore, objectification has been theoretically linked to the perpetration of sexual aggression in particular (Dworkin & MacKinnon, 1985; Dworkin & MacKinnon, 1988; Kelland, 2011), and indeed, there is some empirical research into the potential relationship between objectification and

sexual aggression (e.g. Rudman & Borgida, 1995). In one study where a fictitious woman reported being the victim of rape, higher levels of victim dehumanization and objectification (in the form of sexualization) increased victim-blame and reduced some elements of perceived suffering (Loughnan, et al., 2013). In sum, both dehumanization and objectification have been linked to physical violence against women, and objectification is further linked to blaming the victims of sexual aggression.

The impact of objectification on rape victimization extends beyond negative perceptions of victims. Men who dehumanize women in an implicit associations test (IAT) to a greater degree (i.e., by associating them to either animals or objects) not only report more negative attitudes toward women who have been raped but also express greater willingness to rape and sexually harass (Rudman & Mescher, 2012). The same authors found that men who implicitly related women to either objects or animals scored higher on rape proclivity; furthermore, those men who implicitly linked women with animals were more likely to aggress against women in the laboratory using a rape behavior analogue. In short, sexual objectification is linked to negative and harmful implicit attitudes about victims of sexual aggression, as well as increased interest in and endorsement of analogous behaviors.

The Present Studies

The body of work discussed thus far presents initial evidence that there is some relationship among dehumanization, objectification, and sexual aggression. However, these studies stop short of examining the predictive

roles of dehumanization and objectification on men's explicit self-report measures of sexual aggression attitudes and interests as the primary outcomes. Likewise, they fail to control for individual differences in known correlates of sexual aggression. Thus, it is not clear whether the roles of dehumanization and objectification as currently established in the literature are actually enhancing our understanding of sexual aggression against women or whether the constructs are simply acting as proxies for established third-factor effects. In other words, we have not ruled out the possibility that the previously studied effects of dehumanization and objectification on sexual aggression can be otherwise accounted for by variability from other known related constructs. The present work seeks to fill this gap. Knowing that objectification has been linked to general physical aggression (Vasquez, et al., 2017) and attitudes about women who are victims of intimate partner violence (Pacilli et al., 2017), it follows that such a robust investigation of its role in sexual aggression is appropriate and timely.

Although some studies to date have looked at dehumanization and/or objectification within the context of sexual aggression, their approaches have been somewhat periphery. Those previous studies which have used sexual objectification as a predictor only looked at outcomes concerning specific attitudes about specific victims (e.g., blame; Loughnan et al., 2013) or attitudes about specific perpetrators (e.g., blame; Bernard, Loughnan, Marchal, Godart, & Klein, 2015). Those studies which examined men's sexual aggression interests and behavior as an outcome either treated

dehumanization as an implicit measure (Rudman & Mescher, 2012) or objectification as a mediator in the specific and limited context of alcohol use (Gervais, DiLillo, & McChargue, 2014; Haikalis, DiLillo, & Gervais, 2015). The present set of studies aims to partially replicate and extend this line of recent research, filling the gap by directly and explicitly examining the roles of dehumanization and objectification in men's sexual aggression-related attitudes and interests. We seek to accomplish this goal in a pair of studies which first establish correlational evidence of this role, while controlling for other known correlates, and then experimentally test a causal relationship.

We conceptualize sexually aggressive attitudes and interests in the present work as rape proclivity, acceptance of unfavorable attitudes about rape victims, interest in sexual harassment, and additionally (in Study 2) a behavioral analogue of sexual aggression. No self-report measures of actual perpetration behaviors are used in accordance with the British Psychological Association's Code of Human Research Ethics (because asking about illegal behaviors constitutes more than minimal risk to participants). The control factors tested in Study 1 all have theoretical and/or correlational links to sexual aggression based on prior literature, including hostile and benevolent sexism (Abrams, Viki, Masser, & Bohner, 2003; Masser, Viki, & Power, 2006), narcissism (Bushman, et al., 2003), psychopathy (Hersh & Gray-Little, 1998; Kosson, Kelly, & White, 1997), physical aggression (Lackie & de Man, 1997), sexual sadism (Heilbrun & Loftus, 1986), and general sexual promiscuity (Yost & Zurbriggen, 2006). Additionally, we included several

aspects of masculinity which have been associated with objectification and sexual aggression (Mikorski & Szymanski, 2016; Seabrook, Ward, & Giaccardi, 2016): the role of contingency of self-worth on masculinity and conformity to certain masculine norms (i.e., risk-taking, violence, power over women, and being a “playboy”).

Study 1

In our first study we sought to examine whether men’s dehumanization and objectification of women relates to their sexual aggression attitudes and interests above and beyond a range of previously established related factors. Specifically, we sought to assess (a) whether dehumanization and objectification of women in general correlate with men’s sexually aggressive attitudes and interests and (b) whether this relationship is maintained when controlling for specific individual differences.

Although our first study was largely exploratory, with no a priori predictions being made about the impact of specific control variables or differences in manifestations of dehumanization (e.g., human nature vs. human uniqueness), we sought to establish initial strong evidence for a direct link between dehumanization and objectification with sexually aggressive attitudes and interests in men. We did expect that there would be relationships between both dehumanization and objectification with all sexual aggression factors that would act as a foundation to experimental tests of

causation².

Method

Participants. Our study was reviewed and approved (<https://osf.io/7gctk/>) by the institutional ethics board of a large United Kingdom university for compliance with standards for the ethical treatment of human participants prior to study recruitment. A total of 225 men were recruited through an online site, Prolific Academic, and were paid £1.50 (approx. \$2). Thirteen failed to complete three or more scales, and 22 people began the study and failed to complete it, leaving a final sample of 190 men. All participants were British male adults who identified as heterosexual. Due to the sensitive nature of the topic, and in hopes of encouraging truthful responding by emphasizing anonymity, no further demographic data were gathered. Prior to full data collection, ten initial participants were run, and we noticed that due to a survey software issue, they were skipping or responding invalidly to a crucial measure, the Other Objectification Questionnaire (OOQ). Their data were not examined in relation to study hypotheses at this time, and the problem was corrected within the Qualtrics survey mechanics platform prior to continuing data collection. Thus, these ten participants' data

² As stated, we did not make specific *a priori* predictions about differential effects of human nature and human uniqueness. This was because theoretical arguments for each type of dehumanization can be made. Firstly, it makes theoretical sense that animalistic dehumanization would be especially influential on sexual aggression- an act where the body of the victim is treated as taking precedence over their human uniqueness traits, such as the mind and rationality. This is also consistent with certain elements of Nussbaum's conceptualization of objectification, including denial of autonomy, violability, and denial of subjectivity. Mechanistic dehumanization, on the other hand, could play a role in acts of sexual aggression wherein the victim is seen as lacking human nature traits, such as human emotions and pain. This would be consistent with elements of objectification which include instrumentality, fungibility, and again both violability and denial of subjectivity.

were excluded on the OOO only; they were retained on all other measures.

Procedure and measures. All materials and measures can be found in Appendix A (as well as online, <https://osf.io/v3d8x/>). Participants completed the study online. Following informed consent, all participants completed the Other Objectification Questionnaire (Noll & Fredrickson, 1998) and the Human Nature and Human Uniqueness scales (Bastian et al., 2012)³. They all also completed three dependent variable measures relevant to sexual aggression: the Likelihood to Sexually Harass Scale (LSH; Pryor, 1987), the Attraction to Sexual Aggression Scale's rape proclivity items (ASAI; Malamuth, 1989), and the Attitudes toward Rape Victims Scale (ARVS; Ward, 1988). To reduce fatigue, the control measures were split such that they were each completed by half the sample based on random assignment. The specific scales included for the two subsamples were chosen such that an equal number of items would be completed by each group. One half (102 men; reduced to 96) completed the Ambivalent Sexism Inventory (ASI; Glick & Fiske, 1996), the Masculinity Contingency Scale's (MCS) threat scale (Burkley, Wong, & Bell, 2016), and four Conformity to Masculine Norms Inventory subscales (i.e., risk taking, violence, power over women, and playboy; Parent & Moradi, 2011). The other half (101 men; reduced to 94) completed the Short Dark Triad (SD3) scales for narcissism and psychopathy (Jones & Paulhus, 2014); the Multidimensional Inventory of Development,

³ They all also completed measures of warmth, morality, and competence (Leach, Ellemers, & Barreto, 2007), as part of the larger thesis. These were excluded from the final publication, but the results are included in the supplementary analyses for this chapter (Appendix B).

Sex, and Aggression's (MIDSA) sexual sadism subscales (Knight & Cerce, 1999); and the physical aggression scale (Wrench, 2002). The scale descriptions that follow conform to the order of presentation: dehumanization and objectification measures, then sexual aggression attitudes and beliefs measures, and lastly control measures.

Objectification. The Self-Objectification Questionnaire (SOQ; Noll & Fredrickson, 1998) is commonly used in objectification research. Strelan and Hargreaves (2005) modified the SOQ to measure the objectification of others, referring to this as the Other Objectification Questionnaire (OOQ). Employing the latter approach, we asked participants to rank the relative importance of appearance and competence attributes on their evaluation of the bodies of women. This scale has been used similarly with success in past research (Kozak, Frankenhauser, & Roberts, 2009; Loughnan et al., 2015). The scale consists of a total of ten items: five appearance-based (i.e., sex appeal, physical attractiveness, weight, measurements, and toned muscles) and five competence-based (i.e., health, physical fitness level, strength, coordination, and stamina). Participants' scores were calculated by separately summing the appearance and competence ranks, and then subtracting the sum of the competence ranks from the sum of the appearance ranks. This produced a score ranging from -25 to 25, with higher scores reflecting greater objectification. For ease of interpretation, 25 was then added to all scores to create positive numbers.

Dehumanization. To assess the tendency to deny human nature and

human uniqueness, we asked participants to rate a specific woman, as is typical in the literature that has employed these scales. There were four human nature items (e.g., “(this woman) Is emotional, responsive, and warm”; Bastian et al., 2012), measured from 1 (*Not at all*) to 7 (*Very much so*) ($\alpha = .76$). Similarly, there were four human uniqueness items (e.g., “(this woman) Is rational, logical, and intelligent”; Bastian, et al., 2012), measured from 1 (*Not at all*) to 7 (*Very much so*) ($\alpha = .70$).

Sexual harassment interest. The Likelihood to Sexually Harass Scale (LSH; Pryor, 1987) consists of ten scenarios involving a man and a woman and in which male participants are asked to imagine themselves as the male character. To reduce participant fatigue, we modified this scale such that only the five shortest scenarios were used. In each scenario, the male character is in a position of power and three possible courses of action are listed. An example scenario is:

“Imagine that you are a Hollywood film director. You are casting for a minor role in a film you are planning. The role calls for a particularly stunning actress, one with a lot of sex appeal. How likely are you to do the following things in this situation?”

Participants are asked to assume there would be no consequences for their actions and then rate the likelihood of their engaging in three possible behaviors listed (e.g., as related to the scenario above: “Would you ask the actress to whom you were most personally attracted to talk with you about the role over dinner?”) from 1 (*Not at all likely*) to 5 (*Very likely*). *Only one* of the three courses of action involves sexual harassment, and it is the five summed responses to these critical items across the five scenarios used (ten

in the full version of the scale) that form participants' scale score. The critical response in relation to the scenario above is to the item asking "Would [you] give the role to the actress who agreed to have sex with you?" Higher scores indicate higher likelihood to sexually harass ($\alpha = .90$).

Rape proclivity. The Attraction to Sexual Aggression Inventory (ASAI; Malamuth, 1989) measures attraction to various sexual behaviors, including those involved in conventional, unconventional, and deviant sex. For our study, only those 14 items assessing attitudes related specifically to rape and sexual assault were used because they were most relevant to our research question. An example item from this scale is: "How arousing would it be to force a female to do something sexual she did not want to do," rated from 1 (*Not Very Arousing*) to 5 (*Very Arousing*). Mean participant scores were calculated, with higher scores indicating greater rape proclivity ($\alpha = .91$).

Unfavorable attitudes toward rape victims. The Attitudes toward Rape Victims Scale (ARVS; Ward, 1988) consists of 25 items assessing attitudes concerning victims of rape that correspond with common rape myth endorsement. For example, "the extent of the woman's resistance should be the major factor in determining if a rape has occurred," measured from 1 (*Strongly Disagree*) to 5 (*Agree Strongly*). Participants' scores were computed by summing the responses across items, with higher scores indicative of more unfavorable attitudes toward rape victims ($\alpha = .91$).

Ambivalent sexism. The Ambivalent Sexism Inventory is a 22-item

scale (Glick & Fiske, 1996) measuring two facets: benevolent sexism (BS; $\alpha = .84$) and hostile sexism (HS; $\alpha = .94$), scaled from 1 (*Disagree Strongly*) to 6 (*Agree Strongly*). An example item from the benevolent sexism subscale is: “No matter how accomplished he is, a man is not truly complete as a person unless he has the love of a woman,” whereas an example of an item from the hostile sexism subscale is: “Women seek to gain power by getting control over men.” These related, yet functionally distinct, aspects of sexism are reflected in the two subscales of the measure. Scores for each subscale were averaged, and higher scores indicate stronger levels of sexism.

Masculinity factors. The Masculinity Contingency Scale (MCS; Burkley et al., 2016) measures the extent that men’s self-worth and identity depend on their personal masculinity, without relying on specific, often culturally dependent norms. We employed the five-item threat subscale, which assesses how much one’s sense of self-worth is threatened by failure to live up to the demands of masculinity (e.g., “My self-worth suffers if I think my manhood is lacking”), rated from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). The threat subscale is more related to negative outcomes for men than the un-used subscale related to boosting self-worth through masculinity (Burkley et al., 2016). Scores were computed by averaging across items, with higher scores indicating greater contingency of self-worth based on masculinity, $\alpha = .88$.

The Conformity to Masculine Norms Inventory-46 (CMNI-46; Parent & Moradi, 2009; Parent & Moradi, 2011) measures conformity to specific

masculinity norms. We employed four subscales, totaling 19 items, which were the most theoretically relevant to sexual aggression: risk taking (e.g. “I frequently put myself in risky situations,” $\alpha = .87$), violence (e.g. “Sometime violent action is necessary,” $\alpha = .82$), power over women (e.g. “In general, I control the women in my life,” $\alpha = .79$), and playboy (e.g. “If I could, I would frequently change sexual partners,” $\alpha = .80$). All items were rates from 1 (*Strongly Disagree*) to 4 (*Strongly Agree*), with higher mean scores indicating greater conformity to masculine norms.

Dark triad/tetrad personality factors. The dark triad is a constellation of traits including narcissism, psychopathy, and Machiavellianism, which are associated with non-pathological, yet negative and “dark” personalities (Paulhus & Williams, 2002). In addition, emerging literature has suggested a fourth dimension, sadism, forms a “dark tetrad” of personality traits with these others (Chabrol, Leeuwen, Rodgers, & Sejourne, 2009). We measured psychopathy, narcissism, and sadism. We did not measure Machiavellianism because we did not expect it to predict sexual aggression based on lack of theoretical relevance as well as lack of prior literature making such a link. We employed the Short Dark Triad (SD3; Jones & Paulhus, 2014), which has nine items per scale, rated from 1 (*Disagree Strongly*) to 5 (*Agree Strongly*), to measure narcissism (e.g. “Many group activities tend to be dull without me,” $\alpha = .69$) and psychopathy (e.g. “Payback needs to be quick and nasty,” $\alpha = .70$). Participants’ mean scores were computed for each scale, with higher scores indicative of stronger

endorsement of each factor. We measured sexual sadism using the Multidimensional Inventory of Development, Sex, and Aggression (MIDSA; Knight & Cerce, 1999; Knight, Prentky, & Cerce, 1994; MIDSA, 2011). The two subscales we used in our study were the seven-item sadistic fantasy subscale (e.g. “I have thought about embarrassing or humiliating a woman or girl during sex,” $\alpha = .77$) and the eight-item sadistic behavior subscale (e.g. “I have purposely hurt a woman or girl physically during sex,” $\alpha = .83$). Both range responses from 1 (*Disagree Strongly*) to 5 (*Agree Strongly*), with higher mean scores indicating greater endorsement of sexual sadism.

Physical aggression. The Physical Aggression Scale (Wrench, 2002) is a 15-item scale measuring general physical aggression across three factors: object violence, physical confrontation, and control. Responses are made on a scale ranging from 1 (*Strongly disagree*) to 5 (*Strongly agree*), scores were averaged across all items, and higher overall scores indicate greater aggression ($\alpha = .85$). A sample item is: “When I get upset, I have a tendency to throw objects.”

Results

Analysis plan and supplements. Initial *t*-tests confirmed that there were no significant differences between the two subsamples that were collected on measures of dehumanization, objectification, or sexual aggression ($ps > .227$), and thus the groups were combined into a single sample for analysis. Pearson’s correlations and descriptive statistics were then computed for all measures in relation to the primary variables of interest

and these can be found in Table 1. Correlations among the control variables can be found in Table 2.

Table 1.
Study 1 Descriptive Statistics and Correlations among Study Variables, Study 1

| | <i>M (SD)</i> | <i>n (Possible Scores)</i> | Correlations | | | | | |
|--------------------------|---------------|----------------------------|--------------|----------|----------|---------|---------|---------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 |
| Main Variables | | | | | | | | |
| 1. Objectification | 20.49 (11.13) | 182 (0–50) | -- | | | | | |
| 2. Human Nature | 4.97 (1.05) | 189 (1–7) | .029 | -- | | | | |
| 3. Human Uniqueness | 5.00 (.96) | 188 (1–7) | -.014 | .742*** | -- | | | |
| 4. LSH | 8.46 (4.79) | 190 (0–25) | -.203*** | -.133 | -.070 | -- | | |
| 5. ASAI | 1.37 (.53) | 190 (1–5) | -.167* | -.261*** | -.165* | .513*** | -- | |
| 6. ARVS | 1.62 (.58) | 190 (1–5) | -.094 | -.187* | -.234*** | .460*** | .429*** | -- |
| Control Variables | | | | | | | | |
| Narcissism | 2.47 (.70) | 94 (1–5) | -.007 | -.155 | -.183 | .275*** | .217* | .323*** |
| Psychopathy | 2.09 (.65) | 94 (1–5) | -.232* | -.128 | -.060 | .546*** | .423*** | .506*** |
| Physical Aggression | 1.88 (.63) | 94 (1–5) | -.122 | -.103 | -.092 | .464*** | .446*** | .447*** |
| Sadistic Fantasy | 1.32 (.43) | 93 (1–5) | .004 | -.142 | -.048 | .344*** | .205* | .260* |
| Sadistic Behavior | 1.29 (.43) | 94 (1–5) | -.026 | -.117 | .007 | .244* | .072 | .222* |
| Benevolent Sexism | 3.29 (.94) | 95 (1–6) | -.136 | -.016 | -.145 | .222* | .182 | .266*** |
| Hostile Sexism | 3.04 (1.11) | 95 (1–6) | -.160 | -.397*** | -.480*** | .322*** | .288*** | .616*** |
| Masculine Contingency | 2.20 (1.02) | 93 (1–5) | -.257* | -.169 | -.296*** | .336*** | .130 | .433*** |
| Masculine Norm: Risk | 2.15 (.60) | 95 (1–4) | -.077 | -.194 | -.210* | .311*** | .204* | .351*** |
| Masculine Norm: Violence | 2.42 (.54) | 95 (1–4) | -.144 | -.183 | -.126 | .310*** | .150 | .349*** |
| Masculine Norm: Power | 1.67 (.62) | 95 (1–4) | -.140 | -.308*** | -.379*** | .443*** | .477*** | .619*** |
| Masculine Norm: Playboy | 2.30 (.71) | 95 (1–4) | -.185 | -.027 | .048 | .426*** | .243 | .228* |

Note. LSH = Likelihood to Sexually Harass (measuring sexual harassment interest); ASAI = Attraction to Sexual Aggression Inventory (measuring rape proclivity); ARVS = Attitudes toward Rape Victims Scale (measuring unfavorable attitudes toward rape victims)

* $p < .05$. *** $p < .001$.

Table 2.

Correlations Among Control Variables

| <u>Sample 1</u> | <u>1</u> | <u>2</u> | <u>3</u> | <u>4</u> | <u>5</u> | | | | |
|------------------------------|----------|----------|----------|----------|-----------|-----------|-----------|-----------|-----------|
| 1. Narcissism | 1 | | | | | | | | |
| 2. Psychopathy | .199* | 1 | | | | | | | |
| 3. Physical Aggression | .172 | .686** | 1 | | | | | | |
| 4. Sadistic Fantasy | .258** | .296** | .231* | 1 | | | | | |
| 5. Sadistic Behavior | .267** | .182 | .114 | .844** | 1 | | | | |
| <u>Sample 2</u> | <u>6</u> | <u>7</u> | <u>8</u> | <u>9</u> | <u>10</u> | <u>11</u> | <u>12</u> | <u>13</u> | <u>14</u> |
| 6. ASI BS | 1 | | | | | | | | |
| 7. ASI HS | .403** | 1 | | | | | | | |
| 8. MCS | .326** | .276** | 1 | | | | | | |
| 9. Masculine Norm: Risk | .074 | .087 | .231* | 1 | | | | | |
| 10. Masculine Norm: Violence | -.064 | .355** | .166 | .282** | 1 | | | | |
| 11. Masculine Norm: Power | .254* | .497** | .429** | .438** | .203* | 1 | | | |
| 12. Masculine Norm: Playboy | -.213* | .061 | .020 | .381** | .176 | .273** | 1 | | |
| 13. Promiscuity 1 | -.024 | -.050 | .154 | .407** | .184 | .311** | .299** | 1 | |
| 14. Promiscuity 2 | .159 | -.007 | -.023 | .170 | -.041 | .047 | .065 | .439** | 1 |

Note. * $p < 0.05$, two-tailed. ** $p < 0.01$, two tailed. ASI BS = Ambivalent Sexism Inventory Benevolent Sexism Scale; ASI HS = Ambivalent Sexism Inventory Hostile Sexism Scale. MCS = Masculine Contingency Scale.

We next sought to test the relative contributions of objectification, human nature, and human uniqueness to each of the sexual aggression attitudes outcome measures (rape proclivity, unfavorable attitudes toward rape victims, and sexual harassment interest) by running three individual initial regression models (one for each outcome). We then tested the predictor variables retained in each of these initial models against control variables that were correlated with the given outcome to determine if their contribution would remain significant when taking each of these factors into account. To help control for overall error, only variables with correlations at or below the significance level of .001 were entered into these models.

Additional analyses for Study 1 were also run, including using bootstrapping for all regression models. These produced a similar pattern of results to those reported here and can be found in Appendix B, as well as the authors' online supplementary analyses (<https://osf.io/r832j/> & <https://osf.io/s6p3k/>). All data for this project are open access, and data for Study 1 can be accessed at <https://osf.io/24zbw/> .

Rape proclivity (ASAI). The ASAI was positively correlated at $p \leq .001$ with both the other sexual aggression attitudes measures and four of the control variables (i.e., the masculine norm of power over women, physical aggression, psychopathy, and hostile sexism) (see Table 1). Of note, the correlation with objectification was in the opposite direction from predictions. We then ran a regression model to test the relative contributions of dehumanization and objectification measures to rape proclivity (Model 1 in

Table 3). In this initial regression model, objectification, human nature, and human uniqueness were entered ($\text{Adj. } R^2 = .08$)⁴. Both objectification ($b = -.01$, $SE = .00$, $\beta = -.15$, $p = .034$) and human nature ($b = -.14$, $SE = .05$, $\beta = -.29$, $p = .007$) were found to be significant predictors of rape proclivity. Next, objectification and human nature were tested against the four control variables of interest (based on their correlations with rape proclivity) in a series of hierarchical regressions (Models 2-5 in Table 3). For each of these, in Step 1 objectification and human nature were entered. In Step 2 of each model individual control variables were entered: the masculine norm of power over women (Model 2), physical aggression (Model 3), psychopathy (Model 4), and hostile sexism (Model 5). These results show that in Step 2, objectification was not retained in any models. Neither objectification or human nature was retained when controlling for psychopathy or physical aggression. However, human nature was retained in Step 2 when tested against hostile sexism ($p = .014$) and the masculine norm of power over women ($p = .029$). Thus, human nature continued to significantly contribute to rape proclivity while controlling for two of four additional predictors⁵.

⁴ Post-hoc achieved power 0.94.

⁵ Post-hoc achieved power range of 0.35- 0.86

Table 3.
Hierarchical Linear Regression Models Predicting Rape Proclivity, Study 1

| Variables | Step | Model 1 | | | Model 2 | | | Model 3 | | | Model 4 | | | Model 5 | | |
|--|------|---------|----------|---------|---------|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | β | b | t | β | b | t | β | b | t | β | b | t | β | b | t |
| Objectification | 1 | -.15 | -.01 | -2.17* | -.14 | -.01 | -1.45 | -.17 | -.01 | -1.60 | -.17 | -.01 | -1.60 | -.15 | -.01 | -1.50 |
| | 2 | | | | -.11 | -.01 | -1.19 | -.12 | -.01 | -1.21 | -.08 | -.00 | -.78 | -.13 | -.01 | -1.32 |
| Human Nature | 1 | -.26 | -.13 | -3.69** | -.34 | -.15 | -3.41** | -.19 | -.11 | -1.85 | -.19 | -.11 | -1.85 | -.33 | -.15 | -3.31** |
| | 2 | | | | -.21 | -.10 | -2.23* | -.14 | -.10 | -1.45 | -.14 | -.07 | -1.38 | -.27 | -.13 | -2.51* |
| Masculine Norm: Power | 2 | | | | .39 | .31 | 4.08*** | | | | | | | | | |
| Physical Aggression | 2 | | | | | | | .40 | .37 | 4.12*** | | | | | | |
| Psychopathy | 2 | | | | | | | | | | .38 | .33 | 3.74*** | | | |
| Hostile Sexism | 2 | | | | | | | | | | | | | .16 | .07 | 1.43 |
| <i>F</i> | 1 | | 9.37*** | | | 7.28** | | | 2.95 | | | 2.94 | | | 7.02** | |
| | 2 | | | | | 11.24*** | | | 8.00*** | | | 6.93*** | | | 5.42** | |
| (<i>df</i> , <i>df</i> _{error}) | 1 | | (2, 179) | | | (2, 89) | | | (2, 86) | | | (2, 86) | | | (2, 88) | |
| | 2 | | | | | (3, 88) | | | (3, 85) | | | (3, 85) | | | (3, 87) | |
| Adj. <i>R</i> ² | 1 | | .09 | | | .12 | | | .04 | | | .04 | | | .12 | |
| | 2 | | | | | .25 | | | .19 | | | .17 | | | .13 | |
| ΔR^2 | | | | | | .14*** | | | .16*** | | | .13*** | | | .02 | |

Note: * $p < .05$. ** $p < .01$. *** $p < .001$.

Unfavorable attitudes toward rape victims (ARVS). The ARVS was positively correlated at $p \leq .001$ with both the other sexual aggression attitude measures and nine control variables (the masculine norm of power over women, hostile sexism, psychopathy, physical aggression, masculine contingency, the masculine norm of risk taking, the masculine norm of violence, narcissism, and benevolent sexism) (see Table 1). In the initial regression model to test the relative contributions of dehumanization and objectification measures to unfavorable attitudes toward rape victims, objectification, human nature, and human uniqueness were entered (Adj. $R^2 = .05$). Human uniqueness was the only significant predictor retained ($b = -.14$, $SE = .07$, $\beta = -.23$, $p = .038$)⁶. Thus, human uniqueness was then tested against the nine correlated control variables in a series of hierarchical regressions (Models 1-9 in Table 4). For each of these, in Step 1 human uniqueness was entered, and in Step 2 individual control variables were entered. These models show that human uniqueness was retained in Step 2 when controlling for psychopathy ($p = .038$), benevolent sexism ($p = .025$), and the masculine norm of Violence ($p = .025$). However, human uniqueness was not retained in Step 2 of the models testing against narcissism, physical aggression, hostile sexism, the masculinity contingency scale, or the masculine norms of risk taking and power over women⁷. So, human uniqueness continued to contribute to negative attitudes toward rape victims in one-third of the models.

⁶ Post-hoc achieved power 0.84

⁷ Post-hoc achieved power range 0.41- 0.58

Table 4.

Hierarchical Linear Regression Models Predicting Unfavorable Attitudes toward Rape Victims, Study 1

| Variables | | Model 1 | | | Model 2 | | | Model 3 | | | Model 4 | | |
|--|---|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|
| | | β | b | t | β | b | t | β | b | t | β | b | t |
| Human Uniqueness | 1 | -.26 | -.14 | -2.57* | -.26 | -.14 | -2.57* | -.22 | -.15 | -2.12* | -.22 | -.15 | -2.12* |
| | 2 | -.02 | -.01 | -.18 | .03 | .02 | .32 | -.19 | -.13 | -2.11* | -.18 | -.12 | -1.91 |
| Masculine Norm: Power | 2 | .64 | .55 | 7.44*** | | | | | | | | | |
| Hostile Sexism | 2 | | | | .61 | .30 | 6.26*** | | | | | | |
| Psychopathy | 2 | | | | | | | .50 | .48 | 5.60*** | | | |
| Physical Aggression | 2 | | | | | | | | | | .43 | .44 | 4.66*** |
| <i>F</i> | 1 | | 6.59* | | | 6.59* | | | 4.51* | | | 4.51* | |
| | 2 | | 32.95*** | | | 24.24*** | | | 18.65*** | | | 13.63*** | |
| (<i>df</i> , <i>df</i> _{error}) | 1 | | (1, 91) | | | (1, 91) | | | (1, 92) | | | (1, 92) | |
| | 2 | | (2, 90) | | | (2, 90) | | | (2, 91) | | | (2, 91) | |
| Adj. <i>R</i> ² | 1 | | .06 | | | .06 | | | .04 | | | .04 | |
| | 2 | | .41 | | | .34 | | | .28 | | | .21 | |
| ΔR^2 | | | .36*** | | | .28*** | | | .24*** | | | .18*** | |

Note: * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 4 (continued)

| Variables | | Model 5 | | | Model 6 | | | Model 7 | | | Model 8 | | | Model 9 | | |
|--|---|---------|----------|-------------|---------|---------|--------|---------|---------|--------|---------|---------|--------|---------|---------|--------|
| | | β | b | t | β | b | t | β | b | t | β | b | t | β | b | t |
| Human Uniqueness | 1 | -.26 | -.14 | -2.54* | -.26 | -.14 | -2.57* | -.26 | -.14 | -2.57* | -.22 | -.15 | -2.12* | -.26 | -.14 | -2.57* |
| | 2 | -.14 | -.07 | -1.38 | -.19 | -.10 | -1.93 | -.22 | -.12 | -2.27* | -.16 | -.11 | -1.63 | -.23 | -.12 | -2.29* |
| Masculine Contingency | 2 | .42 | .22 | 4.33** * | | | | | | | | | | | | |
| Masculine Norm: Risk | 2 | | | | .29 | .34 | 3.46** | | | | | | | | | |
| Masculine Norm: Violence | 2 | | | | | | | .29 | .30 | 3.08** | | | | | | |
| Narcissism | 2 | | | | | | | | | | .29 | .27 | 2.94* | | | |
| Benevolent Sexism | 2 | | | | | | | | | | | | | .21 | .12 | 2.09* |
| <i>F</i> | 1 | | 6.47* | | | 6.59* | | | 6.59* | | | 4.51* | | | 6.59* | |
| | 2 | | 13.25*** | | | 9.66*** | | | 8.35*** | | | 6.77* | | | 5.60* | |
| (<i>df</i> , <i>df</i> _{error}) | 1 | | (1, 89) | | | (1, 91) | | | (1, 91) | | | (1, 92) | | | (1, 91) | |
| | 2 | | (2, 88) | | | (2, 90) | | | (2, 90) | | | (2, 91) | | | (2, 90) | |
| Adj. <i>R</i> ² | 1 | | .06 | | | .06 | | | .06 | | | .04 | | | .06 | |
| | 2 | | .21 | | | .16 | | | .14 | | | .11 | | | .09 | |
| ΔR^2 | | | .16*** | | | .11** | | | .09** | | | .08* | | | .04* | |

Note: * $p < .05$. ** $p < .01$. *** $p < .001$.

Sexual harassment interest (LSH). The LSH scale was positively correlated with both the other sexual aggression attitudes measures and the majority of control measures (see Table 1). Of note, the correlation with objectification was in the opposite direction from our predictions. In the initial regression wherein objectification, human nature, and human uniqueness were entered (Adj. $R^2 = .04$)⁸, only objectification significantly predicted sexual harassment interest ($b = -.09$, $SE = .03$, $\beta = -.20$, $p = .007$) and was retained for testing against control variables. However, objectification did not remain significant in any of these additional models, except for when it was tested while controlling for the masculine norm of risk taking ($b = -.08$, $SE = .04$, $\beta = -.20$, $p = .048$). In sum, objectification did not generally significantly contribute to men's likelihood to sexually harass when controlling for additional variables and was acting in opposition to our predictions.

Discussion

Results of Study 1 provide initial support for a correlational relationship between dehumanization and men's explicit endorsement of sexual aggression interest and beliefs. In multiple cases, this relationship emerged above and beyond the variance accounted for by relevant control variables. In the case of rape proclivity, human nature was retained in two of four models when tested against controls. The correlations between the controls that also correlated with rape proclivity (i.e., the masculine norm of

⁸ Post-hoc achieved power 0.65

power over women, psychopathy, physical aggression, and hostile sexism) may hint at an underlying personality construct. Endorsement of unfavorable attitudes toward rape victims retained human uniqueness in three of nine models tested. The involvement of different types of human qualities as relevant to rape proclivity versus unfavorable attitudes toward rape victims may indicate that there are differences between the role of dehumanization in attitudes about victims versus attitudes toward the act of sexual aggression itself.

Objectification yielded much less consistent results, indeed showing unexpected *negative* correlations with rape proclivity and likelihood to sexually harass, as well as generally failing to be maintained when controlling for other variables. On the less extreme end of our conceptualization of sexual aggression, interest in sexual harassment was in fact only correlated (negatively) with objectification, and not with measures of dehumanization. These odd results concerning objectification may be an artifact of the scale used which emphasized the element of appearance-focus, and results should therefore be interpreted with caution.

Despite some null and mixed findings for likelihood to sexually harass and objectification, the results for dehumanization remain strong across multiple outcomes, and they point to a robust relationship due to the amount of control exerted by including potential confounds. Dehumanization may come into play later in the progression of events leading up to violence. If sexual aggression is conceptualized as a continuum of severity ranging from

sexual harassment to rape, as we did here, based on the results of Study 1, dehumanization is most relevant in contexts of extreme aggression and more severe forms of mistreatment. It is possible that dehumanization emerges as a form of self-justification as thoughts and attitudes escalate toward actual violence, and it is employed less consistently when assessing victims post-hoc. This possibility points to a potential avenue for further research on why and when some men sexually aggress.

Study 2

Our first study gave us the confidence to say that there is indeed some relationship between dehumanization and sexual aggression which cannot be accounted for entirely by previously established effects. However, our work leaves open the question of the nature of that relationship. Building on the correlational foundation laid in Study 1, we next sought in Study 2 to test the possibility of a causal influence of dehumanization on sexual aggression attitudes and interests. Thus, we experimentally manipulated the sexualization of a woman and measured the influence of this manipulation on men's sexually aggressive attitudes and behaviors toward that particular woman. We again conceptualized sexually aggressive attitudes as acceptance of unfavorable attitudes toward rape victims and interests as rape proclivity. Based on the results of Study 1, we did not measure interest in sexual harassment. Additionally, we examined a behavioral analogue for sexual aggression.

Study 2 was based in a larger body of work in which we ran a pair of

very similar preliminary studies also seeking to experimentally manipulate the sexualization of a woman. The preliminary studies informed the methodology for the study reported here and were approved by the ethics committee of the University of Edinburgh (<https://osf.io/23uf5/>). Specifically, these differed methodologically from the present study only in the stimuli images used and the use of wording within measures to relate to women in general (vs. the particular woman, as done in the study reported). Of note, both preliminary studies ($ns = 343$ and 106) largely replicated the correlations of interest from Study 1, and the results taken collectively across all studies represent robust evidence of these correlational relationships (see Tables A10 and A11, Appendix C). Additionally, the images used in the present study (a control woman in everyday clothing vs. the same woman in sexualized attire) were pre-tested with an online sample to verify that they differed in how the woman depicted was perceived along the dimensions of dehumanization and objectification. This piloting was also approved by the ethics committee of the University of Edinburgh (<https://osf.io/8tx9z/>). They did differ, such that the image of the sexualized woman was attributed lower levels of human nature and human uniqueness, as well as higher levels of objectification, in comparison to the control woman. The details of the broader work that was conducted in relation to Study 2 can be found in Chapter 3, as well as online, <https://osf.io/r832j/>.

In the present study, condition (control vs. sexualized) was treated as the primary predictor, with human nature and human uniqueness serving as

manipulation checks, because sexualization has been shown to increased dehumanizing and objectifying perceptions of women (Heflick & Goldenberg, 2009; Loughnan et al., 2010b; Loughnan et al., 2013). Study 2's outcome variables included a Rape Behavior Analogue (Rudman & Mescher, 2012) in addition to modified versions (re-worded slightly to relate to the specific woman) of the ASAI (measuring rape proclivity) and ARVS (measuring unfavorable attitudes toward a rape victim). We expected that group differences would emerge based on condition, showing greater endorsement of sexual aggression attitudes and interests, as well as a higher number of behaviors in the behavioral analogue, when the woman was sexualized. Because the methodology of Study 2 relates to the woman in our manipulation (participants were asked how they would treat *her*), our second study also improved on Study 1 by better aligning with real-world violence, where the process and costs of dehumanization and objectification are directed toward a given women, not women in general.

Method

Participants. The present study was reviewed and approved (<https://osf.io/8x3a7/>) by the institutional ethics board of a large United Kingdom-based university for compliance with standards for the ethical treatment of human participants prior to recruitment. A total of 128 men were recruited online through Prolific Academic and paid £1 (approx. \$1.32) for their time. Of these recruits, 22 failed to complete the survey and were excluded from analyses, leaving a final sample of 106 men, all of whom were

over the age of 18 and identified as heterosexual British nationals. Due to the sensitive nature of the topic, and in hopes of encouraging truthful responding by emphasizing anonymity, no further demographic information was gathered.

Procedure, materials and measures. Compiled materials and measures for Study 2 can be found in Appendix D, as well as online at <https://osf.io/mxq78/>. The study was conducted online. Participants were randomly assigned to either a control condition ($n = 54$), in which they viewed an image of a woman in everyday clothing (a dark blue top and white skirt), or a sexualized condition ($n = 52$), in which they viewed an image of the same woman in a bikini (teal and polka dotted). Both images depicted the same young attractive model- a thin Caucasian woman with her hair down. The images were taken from the thighs up, and the woman was similarly posed and front facing, looking into the camera and smiling. In both conditions, the woman depicted in the image they viewed was given the following generic description: "The woman below is a recent graduate from a psychology program in the United Kingdom. She enjoys spending time with friends and dating." All participants were then instructed to briefly write about the woman they viewed. Participants in the control condition received the following instructions: "Please take some time to write about this person. Focus on both positive and negative aspects," whereas those in the sexualized condition received these instructions: "Please take some time to write about this person's appearance. Focus on both positive and negative

aspects.” This writing prompt manipulation was based on the one used by Heflick and Goldenberg (2009; see also Heflick, Goldenberg, Cooper, & Puvia, 2011). Following the manipulation, all participants completed two manipulation check measures concerning attributions of human nature and human uniqueness regarding the woman about whom they wrote. Next, three outcome variables were assessed in randomized order: a Rape Behavior Analogue (RBA), modified Attraction to Sexual Aggression Inventory (m-ASAI), and modified Attitudes toward Rape Victims Scale (m-ARVS).

Human Nature and Human Uniqueness scales. The same scales measuring human nature ($\alpha = .75$) and human uniqueness ($\alpha = .74$) used in Study 1 were used here (Bastian et al., 2012).

Rape Behavior Analogue (RBA). Study 2 employed a Rape Behavior Analogue based on the sexual imposition method (cf. Rudman & Mescher, 2012), using the same images as in the cited study. This task involved presenting participants with 17 image pairs, each containing one aggressive and one sexually aggressive image. Participants were instructed:

Imagine you are working to help select pictures for an upcoming study. Along with other women, the woman you wrote about will be participating in this study. It will involve women being exposed many times to a subset of the images you choose, to test perception. For this next task, we will show you two pictures and we would like you to pick the one you think should be used in the women’s study. Pick the one you

think should be shown to the woman you wrote about many times.

Scores were computed by assigning 0 to choices of violent images and 1 to sexually violent images, then summing (possible range: 0–17).

Modified Attraction to Sexual Aggression Inventory (m-ASAI). We again used the ASAI (Malamuth, 1989) to assess rape proclivity. However, the scale was modified such that items and instructions were worded in relation to the woman viewed/written about by participants. Two items that could not be altered to make sense in this changed context were excluded, resulting in a 12-item scale ($\alpha = .82$). The items that were removed were items 1 and 2 from the original scale, which asked about the frequency of having had certain thoughts; because participants were being asked about a specific and novel woman, these items were not applicable here.

Modified Attitudes toward Rape Victims Scale (m-ARVS).

Unfavorable attitudes toward victims of rape was assessed using the ARVS (Ward, 1988), which was modified in our study to relate each item and the instructions to the woman the participants viewed and wrote about. One item which did not make sense in this context was excluded, resulting in a 24-item scale ($\alpha = .89$). The excluded items stated: “Accusations of rape by bar girls, dance hostesses, and prostitutes should be viewed with suspicion,” which was irrelevant to the specific target woman who did not meet these criteria.

Results

All data for this study are open access, and can be found online,

<https://osf.io/xuhr6/> . *T*-tests on the human nature and human uniqueness measures show that our manipulation was effective. The woman in the control condition was perceived as having greater human nature qualities ($M = 5.31$, $SE = 0.13$) than the same woman in the sexualized condition ($M = 4.85$, $SE = 0.14$), $t(104) = 2.43$, $p = .017$, $d = 0.48^9$. The same pattern of results was found for human uniqueness, with the woman in the control condition perceived as having more human uniqueness qualities ($M = 5.20$, $SE = 0.12$) than the same woman in the sexualized condition ($M = 4.69$, $SE = 0.15$), $t(104) = 2.58$, $p = .011$, $d = 0.55^{10}$. However, contrary to predictions, no significant mean differences between conditions were found for the outcome variables, including the m-ASAI, m-ARVS, or the RBA, $ts(104) < .913$, $ps > .363$.

Pearson's correlations were computed for all measures and can be found in Table 5 along with overall descriptive statistics. The left half of Table 6(a) contains the correlations for all study variables broken down by condition. Additionally, the difference between each condition's correlations were tested, and the significance of these tests can be found in the right half of Table 6(b). For each cell, we tested whether the strength of the correlation between variables differed significantly based on condition (whether a participant saw the control woman or saw the sexualized woman). We calculated these comparisons of correlations to explore for more subtle

⁹ Post-hoc achieved power 0.93

¹⁰ Post-hoc achieved power 0.98

conditional differences that did not translate into mean group differences that would be detected by the planned *t*-tests.

Significant differences were found between the correlations by condition for human uniqueness on all outcome measures, including the m-ASAI, m-ARVS, and RBA, such that the negative correlation between human uniqueness and each outcome was strengthened when the sexualized woman was viewed. In other words, when viewing a sexualized woman, the negative correlation between human uniqueness and each sexual aggression-related outcome measure was stronger than the correlation when viewing the control woman image. Human nature showed significant differences between correlations by condition on the RBA only, again such that this negative relationship was stronger when the sexualized woman was viewed.

Table 5.
Descriptive Statistics and Correlations, Study 2

| Variable Name | <i>M (SD)</i> | <i>n (Possible Scores)</i> | Correlations | | | | |
|---------------------|---------------|----------------------------|--------------|---------|--------|-------|----|
| | | | 1 | 2 | 3 | 4 | 5 |
| 1. Human Nature | 5.08 (0.99) | 106 (1–7) | -- | | | | |
| 2. Human Uniqueness | 4.95 (1.03) | 106 (1–7) | .637** | -- | | | |
| 3. m-ASAI | 1.36 (0.44) | 106 (1–5) | -.338** | -.192* | -- | | |
| 4. m-ARVS | 1.73 (0.57) | 106 (1–5) | -.100 | -.348** | .368** | -- | |
| 5. RBA | 7.14 (4.72) | 106 (1–17) | -.117 | -.070 | .320** | .240* | -- |

Note. m-ASAI = modified Attraction to Sexual Aggression Inventory (measuring rape proclivity);
m-ARVS = modified Attitudes toward Rape Victims Scale (measuring unfavorable attitudes toward rape victims);
RBA = Rape Behavior Analogue;
* $p < .05$. ** $p < .01$.

Table 6.

Correlations Between Variables by Condition and Significance of Differences Between Correlations by Condition, Study 2

| Variable | (a) Correlations | | | | | (b) Significance of Difference in Correlations ^a | | | |
|---------------------|------------------|--------|---------|---------|---------|---|-------|-------|-------|
| | 1 | 2 | 3 | 4 | 5 | 2 | 3 | 4 | 5 |
| 1. Human Nature | -- | .695** | -.406* | -.286** | -.319** | .170 | .563 | .103 | .043* |
| 2. Human Uniqueness | .523** | -- | -.399** | -.577** | -.328* | -- | .042* | .021* | .005* |
| 3. m-ASAI | -.305* | -.015 | -- | .357** | .469** | | -- | .899 | .126 |
| 4. m-ARVS | .032 | -.193 | .379** | -- | .314* | | | -- | .429 |
| 5. RBA | .074 | .219 | .200 | .165 | -- | | | | -- |

Note. Correlation for the sexualized Woman Condition are reported above the diagonal of the correlation matrix; for the control woman condition, below. m-ASAI = modified Attraction to Sexual Aggression Inventory (measuring rape proclivity); m-ARVS = modified Attitudes toward Rape Victims Scale (measuring unfavorable attitudes toward rape victims); RBA = Rape Behavior Analogue.

^athe significance of the difference between the pair of correlations for the Sexualized Woman condition and Control conditions

* $p < .05$. ** $p < .01$.

Discussion

Despite the lack of group mean differences, Study 2 revealed important differences in correlations based on experimental condition. These differences between correlations indicate that when a woman is dressed in everyday clothing, the role of dehumanization is negligible in whether men report interest in perpetrating sexual aggression against her. By sharp contrast, when women are sexualized, these factors—particularly attributions of human uniqueness—play a strong role in her being seen as a potential victim of sexual aggression. This pattern represents evidence of a relationship between the sexualization of a target and the likelihood that some men will show a proclivity to both dehumanize and sexually aggress against that woman.

The role of human uniqueness in driving the effects we found here, across all the measures of sexual aggression we examined, is an especially interesting result of our study. Human uniqueness is the dimension of humanity associated with distinguishing humans from animals and includes attributions of traits such as intelligence and rationality. Human nature involves those aspects that are considered essentially—not exclusively—human, such as emotionality and warmth. When a person is denied human uniqueness, as was the case in the results of interest here, they are seen in terms of more animalistic or bestial traits (animalistic dehumanization). When denied human nature, people are viewed as cold and mechanical (mechanistic dehumanization). Because our results relied heavily on denial

of human uniqueness in particular, it seems that some men dehumanize potential victims of sexual aggression in a very specific way, which relies on seeing them as relatively animal-like. Thus, sexualized women in particular are seen as less deserving of the concern and respect attributed to a fully human entity and may be considered more violable in turn.

General Discussion

In a pair of studies, we examined whether dehumanization and objectification are related to men's sexual aggression interests and attitudes toward women in general (Study1), as well as toward a specific female target (Study 2). Study 1 showed correlational links between dehumanization and men's sexual aggression-related attitudes and interests. Critically, dehumanization mattered despite controlling for a set of additional factors that could otherwise explain variance in male sexual aggression. The results for objectification, on the other hand, were unexpected and more sporadic. The results concerning dehumanization from Study 1 directly informed the predictors used in Study 2.

Study 2 replicated the correlations concerning dehumanization and extended these results to provide some experimental evidence of a relationship among attitude and interest factors, as well as a behavioral analogue of sexual aggression. Although we did not find the expected mean group differences, we did find a subtler effect in differences between strength of correlations. In Study 2 the effects were clearest when broken down by condition, showing stronger correlations between dehumanization and sexual

aggression attitudes and interests for a sexually objectified woman.

Additionally, we could break down the effect of dehumanization in our second study, and we found that it seems to be primarily driven by denial of human uniqueness to that woman, especially when she is sexualized. The effects in both studies appeared to be most strongly linked with the most heinous forms of sexual aggression (e.g., rape proclivity).

Taken together in the context of a growing literature on dehumanization and objectification as they relate to sexual aggression, our findings genuinely extend our knowledge of what elements of dehumanization are most relevant to sexually aggressive attitudes and interests in men, as well as when these are most likely to be involved in perpetrators' perceptions of women as potential victims. More specifically, this pair of studies replicates and extends the previously established knowledge of a role for dehumanization and objectification (Loughnan et al., 2013; Rudman & Mescher, 2012) by introducing additional levels of control that take into account the literature on sexual aggression as a whole. We also add novel direct experimental evidence of a causal role of this set of potential victim attributions in explicit perpetrator appraisals. In other words, most critical to the extension of scientific knowledge in our work was the level of control we used in attempting to test the correlational role of dehumanization and objectification as robustly as possible in Study 1, which was then extended via a data-driven experimental test of causation in Study 2. By including mechanistic and animalistic dehumanization in empirical work

on male proclivity toward sexual aggression, we lend support to intuitive and theoretical links between these factors (Dworkin & MacKinnon, 1985; Dworkin & MacKinnon, 1988; Kelland, 2011) and point to directions for future research and applications for this pressing worldwide problem.

Limitations

We did not find a consistent relationship between objectification as a manifestation of dehumanization, and sexual aggression. However, the lack of findings for the measure of objectification may relate to the nature of the scale itself more than the potential role of objectification. Objectification is multi-faceted, with multiple theoretical conceptualizations (Fredrickson & Roberts, 1997; Nussbaum, 1999). Although widely used, the OOQ only allows for measurement of one aspect of objectification, which may be less important for sexual aggression compared with other facets that could be tapped by different measures. This measure is also typically used with a particular reference person in mind, which was not the case in Study 1 here, and hence this may represent an additional limitation. Given the negative correlations found between objectification and sexually harassment interest, the role of objectification should be addressed further in future research by using a more appropriate measure, perhaps a more behavioral report, such as the Interpersonal Sexual Objectification Scale (Davidson, Gervais, Canivez, & Cole, 2013; Kozee, Tylka, Augustus-Horvath, & Denchik, 2007).

Although our work provides evidence linking dehumanization and sexual aggression, there are several limitations to these findings that we

should acknowledge. In Study 1, we did have a relatively small sample for powering the tests which controlled for known correlates of our outcome measures. Also, in Study 1 we did use a reference woman for the measures of dehumanization. Although we did this because it is consistent with how the measures are typically used in other literature, it may have primed participants to think of this woman for the remaining measures, in contrast to their un-primed responding to the measure of objectification.

Additionally, our manipulation in Study 2 failed to elicit mean group differences. This occurred despite pre-testing our image stimuli and combining previously successful manipulations (Heflick & Goldenberg, 2009; Heflick et al., 2011; Loughnan et al., 2010b; Pacilli et al., 2017). One possibility is that this was a result of the specific stimuli images we used, which could represent a limitation of the study's generalizability. Additionally, the present work may be limited by the specific cultural (British) and social context (online) in which it was conducted. Future work could examine alternate manipulations to explore whether differences in sexual aggression occur at a mean group differences level as well as correlationally. A stronger manipulation may be necessary to elicit mean group differences in future research, and lab or naturalistic studies should be undertaken to further investigate this important topic beyond online samples and British men.

Although we did use self-report measures for most manifestations of sexual aggression attitudes and interests, evidence from other work (Gidycz, Warkentin, Orchowski, & Edwards, 2011b) indicates that men are often

aware of and able to accurately report their likelihood to engage in these behaviors. Thus, this may not represent a limitation of the present work in the usual sense. One particular self-report, our measure of sexual harassment interest, failed to show any effects when control factors were included. However, we believe it is unlikely that the failure of the Likelihood to Sexually Harass scale to relate to dehumanization and objectification was a result of responding in self-enhancing ways, especially given that results did appear for the more extreme forms of sexual aggression that we measured. The measure of sexual harassment interest was limited in that it specifically informed respondents that there would be no hypothetical consequences of their actions, but indeed the failure to find an effect under these circumstances, which could hypothetically have enhanced scores, may represent stronger evidence that dehumanization and objectification only relate to more extreme forms of sexual aggression and not to more everyday forms of sexual harassment.

Future Directions

Our work provides a necessary and timely foundation for further research exploration of these important issues. We focused on how some men's dehumanization and objectification of women predicts their own sexual aggression. Given that other men will hold dehumanizing and objectifying beliefs, and the legitimating behavior of other men is robustly associated with men's sexual aggression (Gidycz, Orchowski, & Berkowitz, 2011a; Mitchell, et al., 2002), exploring the social dynamics of dehumanization and

objectification is an important future direction. It may well be that men who objectify together, also offend together—or enable, legitimate, or tolerate others’ offending. There is tentative evidence for this possibility. We know that men (and women) who objectify female victims of sexual and non-sexual violence care about them less (Loughnan et al., 2013; Pacilli et al., 2017). Understanding whether bystander objectification can precipitate, foster, or hide others’ offending is an important future direction and could be applied to the development of interventions and preventions.

Furthermore, research could build more generally toward understanding whether the effect is altered with the inclusion of variables that are relevant to the real-world contexts in which sexual aggression is most likely to occur. One such variable is alcohol use and misuse, which has a well-established relationship with sexual aggression broadly (cf. Davis, Norris, George, Martell, & Heiman, 2006; Davis, Schraufnagel, George, & Norris, 2008; Davis, Stoner, Norris, George, & Masters, 2009; George & Marlatt, 1986) and which has been shown to be mediated by objectification (Gervais et al., 2014; Haikalis et al., 2015). Based on this body of work, adding the role of dehumanization, particularly animalistic dehumanization, to alcohol studies of sexual aggression could be a fruitful future direction. A second avenue for research based on Study 2 is to examine whether sexualization primes (which are so common in the modern world that they are difficult to avoid) beyond the sexualization of the particular woman in question are sufficient to activate the relationship between dehumanization

and sexual aggression we showed here. Future work should be specifically designed with the complexity of real-world contexts and applied uses in mind.

Practice Implications

By improving our understanding of sexual aggression and the factors that contribute to its perpetration, our studies have the potential to aid in the development of more effective prevention efforts and education, as well as to inform interventions and social policy. One major take-away message from our work is that although dehumanization and objectification of women are certainly nasty beliefs to hold and should be eliminated in their own right, not all men who hold them will have an interest in sexual aggression. Indeed, only in certain circumstances will these factors be related. Our work also points to the importance of emphasizing women's particular traits that relate to humanness, and especially human uniqueness, when designing efforts in the service of ultimately reducing sexual aggression perpetration.

Additionally, this emphasis may be especially relevant in either therapeutic or educational settings when working with men who are known to be at a high risk of perpetration based on their individual personality traits such as those factors we used as controls in Study 1. Furthermore, previous intervention efforts for prevention of sexual aggression have often relied on bystanders (Banyard, Plante, & Moynihan, 2003; Coker et al., 2011; Gidycz, et al., 2011a, 2011b), and incorporating an emphasis on women's humanness into these programs could represent a subtler strategy bystanders could be taught to use to direct the attention of a potential perpetrator away from

acting harmfully.

Conclusion

The present work aimed to contribute to research on the antecedents of violence against women with the ultimate hope of adding to the growing empirical literature for determining those individual and social factors that are most related to men's endorsement of sexually aggressive attitudes and interests. Our pair of studies was successful in this aim by establishing robust correlational, as well as experimental, evidence of a role of dehumanization in explicit reports of male sexual aggression attitudes and interests. It is imperative that we work to reduce male sexual aggression toward women, and our studies highlight two important, previously under-examined components: mechanistic and animalistic dehumanization.

Chapter 3- Intermediate Studies in Support of Chapter 2

This chapter includes work conducted in the development of the methodology employed in Study 2 (Chapter 2). Specifically, two preliminary versions of the study are reported, with an intermediate pilot which validated the stimuli images ultimately used. These appear largely as published (in the form of online supplementary materials; Bevens & Loughnan, 2019), with only very minor changes made here.

Study Two, Preliminary Version A

In the first of two preliminary studies that influenced the final design used in Study 2 (Chapter 2), we attempted an initial experimental manipulation of the objectification of a women and examination of the influence of this manipulation on men's sexual aggression reports. Here, we also took into account the most relevant individual differences in participants' attitudes concerning sexual aggression identified in Study One. The present study aimed to begin to bridge the gap between the correlational data on attitudes already demonstrated, and behavioral outcomes related to sexual aggression.

Condition was treated as the primary predictor in this study, with several manipulation checks employed concerning perceptions of the target woman. These were specifically assessing perceived sexiness, objectification, human nature and human uniqueness, and morality, warmth, and competence. Two behavior-based outcome variables were employed: the Rape Behaviour Analogue (Rudman & Mescher, 2012) and a Sexual

Aggression Interest Paradigm (Malamuth, 1989). Variables treated as individual differences here included rape proclivity, unfavourable attitudes towards rape victims, narcissism, psychopathy, and hostile sexism.

Method

Participants. A total of 409 men were recruited through Prolific Academic and were paid 1 GBP for their time. Of these, fifty-two began the study and completed less than 30% of the measures, and nine failed to complete three or more of the six manipulation check scales; these men were excluded from analyses. The average time to complete the survey was 20.44 minutes, and three men who took over an hour and a half to complete it were excluded because the effect of the condition of the experimental manipulation would not have been maintained over such a long session, or completion across multiple sessions. Two men took less than five minutes and were excluded for the possibility of lack of attention. These exclusions brought the mean completion time to 16.13 minutes and left a final sample of 343 men, all of whom identified as British nationals over the age of 18.

Procedure. The following received ethical approval from the University of Edinburgh (<https://osf.io/23uf5/>). Participants completed the study online. Based on random assignment, 169 (reduced to 164) men were in the control condition, in which they viewed an image of a woman in non-revealing everyday clothing and were asked to write about her following the instructions “Please take some time to write about this person. Focus on both positive and negative aspects.” 188 (reduced to 179) men were assigned to

the sexualized woman condition and viewed an image of the same woman in underwear (same images as Study 1), along with the prompt “Please take some time to write about this person’s physical appearance. Focus on both positive and negative aspects.” The writing prompt manipulation was based on that used by Heflick and Goldenberg (2009; see also Heflick, et al., 2011). In both conditions, the woman was given the following generic description: “The woman below is an undergraduate student in the United Kingdom. She majors in psychology and has average grades. She enjoys spending time with friends and dating.” All participants then completed a set of manipulation checks relative to the woman they wrote about, including one item assessing how sexy they thought she was, a modified Self Objectification Questionnaire, Scales of Human Nature and Human Uniqueness, and scales of Warmth, Morality, and Competence. Following this, two dependent variables were assessed. Based on random assignment, 179 (reduced to 172) men completed the Rape Behavior Analogue (Rudman & Mescher, 2012), and 178 (reduced to 171) completed the Sexual Aggression Interest Paradigm (George & Marlatt, 1986). Lastly, all participants completed the ASAI, ARVS, SD3 Narcissism and Psychopathy scales, and the ASI Hostile Sexism Scale.

Materials and Measures. All materials and measures can be found in Appendix E, as well as online, <https://osf.io/cdet4/>.

Perceived Sexiness of Target Woman Item. A single item was used to assess perceived sexiness of the woman in each image, which was “How

sexy do you consider the woman you wrote about to be?” (1-*Not at all sexy*; 5-*Very sexy*).

Modified Self-Objectification Questionnaire (SOQ). The modified SOQ (OOQ; Strelan & Hargreaves, 2005) is described in detail in study 1, and differed here only in that respondents were asked to make rankings of the importance of the attributes in relation to the specific woman they wrote about.

Human Nature and Human Uniqueness Scales. The same scales measuring Human Nature ($\alpha = 0.67$) and Human Uniqueness ($\alpha = 0.60$) were used here (Bastian, et al., 2012). These scales were ultimately combined to form a single measure of Humanness ($\alpha = 0.78$).

Morality, Warmth, and Competence Scales. Scales assessing Morality ($\alpha = 0.89$), Warmth ($\alpha = 0.89$), and Competence ($\alpha = 0.88$) were employed here (Leach, Ellemers, & Barreto, 2007).

Rape Behavior Analogue (RBA). As an outcome variable, we employed a Rape Behavior Analogue based on the sexual imposition method used in Rudman and Mescher (2012), presenting the same images as used in their study. This task involved presenting participants with 17 pairs of images, each containing one violent image, and one sexually violent image. Participants were told the following: “Imagine you are working to help select pictures for an upcoming study. Along with other women, the woman you wrote about will be participating in this study. It will involve women being exposed many times to a subset of the images you choose, in order to test

perception. For this next task, we will show you two pictures and we would like you to pick the one you think should be used in the women's study. Pick the one you think should be shown to women many times." Scores were computed by assigning 0 to choices of violent images, and 1 to sexually violent images, then summing (possible range 0-17).

Sexual Aggression Interest Paradigm. This measure is based on the method used in George and Marlatt (1986), and here employed the same images as used in the RBA. Each of the images was shown individually and rated on appeal (1-*Not at all appealing*; 5-*Very appealing*). Each page was also unobtrusively timed, and mean time spent viewing violent images, mean time viewing sexually violent images, and the difference between the two times were computed. These timings were the main outcome of interest in this paradigm.

Attraction to Sexual Aggression Inventory (ASAI). The ASAI (Malamuth, 1989) was used again to assess attraction to sexual aggression ($\alpha = 0.88$).

Attitudes Towards Rape Victims Scale (ARVS). Negative attitudes towards victims of rape was assessed using the ARVS (Ward, 1988), $\alpha = 0.88$.

Short Dark Triad (SD3). The Narcissism ($\alpha = 0.77$) and Psychopathy ($\alpha = 0.75$) sub-scales of the SD3 (Jones & Paulhus, 2014) were also used again. Item 7 was again dropped from the Psychopathy sub-scale, in order to strengthen scale reliability.

Ambivalent Sexism Inventory (ASI) Hostile Sexism sub-scale.

Hostile Sexism was assessed using the sub-scale from the ASI (Glick & Fiske, 1996), and had a reliability of $\alpha = 0.92$ in this sample.

Results

All data for this study are open access, and can be found online, <https://osf.io/tbpx3/>. Descriptive statistics for all variables can be found in Table 7 (or the same table can be found labelled as Table S2 of the online Supplementary Tables, <https://osf.io/s6p3k/>). Pearson's correlations were computed for all measures and can be found in Table 8 (or online as Table S3, <https://osf.io/s6p3k/>). Table 9 (or see Table S4 online, <https://osf.io/s6p3k/>) contains the correlations for the Study 2, Preliminary Version A variables, broken down by condition. Independent sample t-tests were performed, and showed that participants differed in how sexy they perceived the woman they wrote about to be based on condition, with the sexualized woman ($M = 3.96$, $SE = .071$), being perceived as more sexy than the control woman ($M = 3.62$, $SE = .073$), $t(340) = -3.394$, $p = .001$, $d = 0.36^{11}$. No other significant differences were found based on condition. This lack of significant differences included our other manipulation check measures: the SOQ, $t(338) = .063$, $p = .950$; Human Nature, $t(341) = .125$, $p = .900$; Human Uniqueness, $t(340) = -1.288$, $p = .199$; Humanness, $t(341) = -.617$, $p = .538$; Morality, $t(336) = .044$, $p = .965$; Warmth, $t(340) = 1.287$, $p =$

¹¹ Post-hoc achieved power 0.99.

.199; and Competence, $t(341) = .229$, $p = .819$. This also extended to the outcome variables: the RBA, $t(170) = -.429$, $p = .668$; and the sexual aggression interest paradigm. This interest paradigm included tests of the mean time spent viewing sexually violent images, $t(169) = -1.194$, $p = .234$; mean time spent viewing violent images, $t(169) = .018$, $p = .986$; mean time difference between viewing violent and sexually violent images, $t(169) = -1.297$, $p = .196$; appeal ratings of sexually violent images, $t(169) = .363$, $p = .717$; and appeal ratings of violent images, $t(169) = -.094$, $p = .925$. Finally, no differences were found on the measures we categorized as individual differences variables in this study: the ASAI, $t(339) = 1.818$, $p = .070$; the ARVS, $t(339) = 1.505$, $p = .133$; psychopathy, $t(338) = 1.428$, $p = .154$; narcissism, $t(338) = 1.186$, $p = .236$; and hostile sexism, $t(339) = .846$, $p = .398$.

Table 7.
Descriptive Statistics for All Variables (Study 2 Preliminary Version A)

| | <i>N</i> | <i>Mean</i> | <i>Std. Deviation</i> | <i>Variance</i> | <i>Skewness</i> | <i>Skewness Std. Error</i> |
|-----------------------|----------|-------------|-----------------------|-----------------|-----------------|----------------------------|
| Humanness | 357 | 6.59 | 12.13 | 147.09 | 7.49 | .129 |
| Human Nature | 351 | 4.99 | 0.97 | .95 | -.26 | .130 |
| Human Uniqueness | 350 | 5.03 | 0.88 | .77 | -.48 | .130 |
| Morality | 343 | 4.81 | 0.99 | .98 | .15 | .132 |
| Warmth | 349 | 5.16 | 1.07 | 1.14 | -.35 | .131 |
| Competence | 349 | 5.03 | 1.01 | 1.02 | -.29 | .131 |
| Objectification | 354 | -3.34 | 12.69 | 161.02 | .54 | .130 |
| ASAI | 355 | 1.42 | 0.51 | .26 | 1.76 | .129 |
| ARVS | 355 | 2.47 | 0.59 | .35 | .71 | .129 |
| Narcissism | 354 | 3.22 | 0.65 | .43 | .18 | .130 |
| Psychopathy | 355 | 2.58 | 0.67 | .44 | .57 | .130 |
| Hostile Sexism | 336 | 3.43 | 1.12 | 1.25 | -.13 | .129 |
| RBA | 172 | 7.18 | 4.17 | 17.41 | 0.22 | .185 |
| Time Sexual Violent | 171 | 8.03 | 5.26 | 27.61 | 4.50 | .186 |
| Time Violent | 171 | 7.54 | 4.16 | 17.32 | 3.60 | .186 |
| Time Difference | 171 | 0.49 | 4.90 | 23.98 | 3.28 | .186 |
| Sexual Violent Appeal | 171 | 2.09 | 0.66 | 0.43 | 0.57 | .186 |
| Violent Appeal | 171 | 2.20 | 0.60 | 0.36 | 0.23 | .186 |

Note. ASAI = Attraction to Sexual Aggression Inventory (measuring rape proclivity);
 ARVS = Attitudes Towards Rape Victims Scale (measuring unfavorable attitudes towards rape victims);
 LSH = Likelihood to Sexually Harass (measuring sexual harassment interest).

Table 8.

Overall Correlations Among Variables (Study 2, Preliminary Version A)

| | <i>Human Nature</i> | <i>Human Uniqueness</i> | <i>Morality</i> | <i>Warmth</i> | <i>Competence</i> | <i>OOQ</i> |
|---|-------------------------|-----------------------------|-----------------|---------------|-------------------|------------|
| <u>Manipulation Checks</u> | | | | | | |
| Human Nature | 1 | | | | | |
| Human Uniqueness | .634** | 1 | | | | |
| Morality | .538** | .417** | 1 | | | |
| Warmth | .604** | .406** | .762** | 1 | | |
| Competence | .495** | .596** | .631** | .591** | 1 | |
| OOQ | .053 | .013 | .010 | .003 | .060 | 1 |
| <u>Outcome and Individual Differences Variables</u> | | | | | | |
| ASAI | -.177** | -.107* | -.172** | -.116* | -.117* | -.158* |
| ARVS | -.306** | -.282** | -.115** | -.062 | -.177** | -.165** |
| Hostile Sexism | -.316** | -.250** | -.140* | -.115** | -.236** | -.276** |
| RBA | -.007 | -.076 | -.022 | -.033 | -.099 | -.169* |
| Narcissism | -.129* | -.099 | .017 | .051 | -.021 | -.103 |
| Psychopathy | -.165** | -.087 | -.001 | .070 | -.042 | -.117* |
| Time Sexual Violent | .060 | .094 | .048 | .032 | .056 | .027 |
| Time Violent | -.006 | -.054 | .007 | -.004 | .053 | .086 |
| Time Difference | .070 | .147 | .045 | .038 | .015 | -.044 |
| Sexual Violent Appeal | -.053 | -.037 | -.034 | -.097 | -.066 | -.212** |
| Violent Appeal | .046 | .012 | .084 | .066 | -.035 | -.072 |

Note. * $p < 0.05$, two-tailed. ** $p < 0.01$, two tailed.

OOQ = Other Objectification Questionnaire; ASAI = Attraction to Sexual Aggression

Inventory; ARVS = Attitudes Towards Rape Victims Scale; RBA = Rape Behavior Analogue.

Table 9.
Correlations Between Variables Based on Condition (Study 2, Preliminary
Version A)

| | Humanness | Human Nature | Human Uniqueness | Morality | Warmth | Competence | OOQ |
|--------------------------|----------------|-----------------|---------------------|---------------|---------------|----------------|----------------|
| <u>Manipulation</u> | | | | | | | |
| <u>Checks</u> | | | | | | | |
| Humanness | 1 | | | | | | |
| Human Nature | NA | 1 | | | | | |
| Human Uniqueness | NA | .591** | 1 | | | | |
| | | .695** | | | | | |
| Morality | .494** | .539** | .324** | 1 | | | |
| | .558** | .540** | .489** | | | | |
| Warmth | .582** | .665** | .343** | .701** | 1 | | |
| | .554** | .550** | .469** | .815** | | | |
| Competence | .580** | .504** | .523** | .532** | .581** | 1 | |
| | .616** | .110 | .654** | .711** | .601** | | |
| OOQ | .105 | .127 | .056 | .082 | .166* | .110 | 1 |
| | -.022 | -.021 | -.024 | -.053 | -.153* | .013 | |
| <u>Individual</u> | | | | | | | |
| <u>Difference &</u> | | | | | | | |
| <u>Outcome Variables</u> | | | | | | | |
| ASAI | -.245** | -.289** | -.135 | -.206** | -.240** | -.165* | -.157* |
| | -.071 | -.059 | -.071 | -.145 | -.007 | -.073 | -.163* |
| ARVS | -.420** | -.419** | -.321** | -.200* | -.148 | -.226** | -.162* |
| | -.233** | -.187* | -.242** | -.037 | .014 | -.131 | -.171* |
| Narcissism | -.248** | -.246** | -.190* | -.086 | -.051 | -.047 | -.135 |
| | -.018 | -.016 | -.017 | .103 | .137 | .001 | -.072 |
| Psychopathy | -.282** | -.289** | -.206** | -.165* | -.066 | -.169* | -.143 |
| | -.005 | -.038 | .028 | .149* | .195** | .082 | -.090 |
| Hostile Sexism | -.411** | -.404** | -.320** | -.209** | -.200* | -.261** | -.337** |
| | -.225** | -.229** | -.185* | -.080 | -.039 | -.215** | -.217** |
| RBA | -.078 | -.042 | -.113 | .017 | -.007 | -.040 | -.211 |
| | .004 | .026 | -.022 | -.008 | .030 | -.135 | -.126 |
| Time Sexual | -.007 | -.018 | .002 | .099 | .070 | -.006 | .087 |
| Violent | .143 | .120 | .145 | .024 | .021 | .107 | -.023 |
| Time Violent | -.119 | -.089 | -.120 | .030 | .015 | .022 | .047 |
| | .107 | .154 | .045 | -.033 | -.041 | .118 | .164 |
| Time Difference | .132 | .087 | .142 | .057 | .048 | -.031 | .027 |
| | .108 | .056 | .144 | .046 | .046 | .060 | -.115 |
| Sexual Violent | -.063 | -.013 | -.096 | .102 | -.055 | .042 | -.211* |
| Appeal | -.043 | -.096 | .018 | -.163 | -.148 | -.186 | -.210 |
| Violent Appeal | .110 | .148 | .038 | .248* | .131 | .068 | -.050 |
| | -.036 | -.057 | -.011 | -.063 | .001 | -.142 | -.093 |

Note. * $p < 0.05$, two-tailed. ** $p < 0.01$, two tailed. Regular font is control woman condition, bold is sexualized woman condition. OOQ= Other Objectification Questionnaire; ASAI = Attraction to Sexual Aggression Inventory; ARVS = Attitudes Towards Rape Victims Scale; RBA = Rape Behavior Analogue.

In order to examine potential sources of the failure of the manipulation, several exploratory analyses were conducted. No significant differences by condition were found in number of participants who chose “choose not to respond,” nor were there any significant differences by condition found in time taken to complete the study. Lastly, the responses made during the writing prompt were coded for content, including for gross negativity related to the appearance of the specific woman used in the images (for example, mentioning her being overly thin, or specific facial features as negatives), for content focusing on the body/appearance (without relation to valence of a given comment), and for person focus content (relating to personality or individuality of the woman). No significant differences were found for the mean number of person focused comments based on condition. However, more men in the control woman condition ($M = 0.92$, $SE = .03$), than the sexualized woman condition ($M = 0.81$, $SE = .04$) made appearance focused comments, $t(230) = 2.372$, $p = .019$, $d = 0.32$ ¹². More men in the sexualized condition ($M = 0.51$, $SE = .04$) than the control condition ($M = 0.18$, $SE = .03$) made grossly negative comments about the specific woman depicted, $t(341) = -6.954$, $p = .000$, $d = 0.74$ ¹³.

Discussion

Based on the lack of results from our manipulation, as well as the somewhat ambiguous results of coding specific written responses to the

¹² Post-hoc achieved power = 0.93

¹³ Post-hoc achieved power = 1.00

images used, we questioned whether these results may have been an artifact of the stimuli images used. Thus, we decided that the next steps should be to pilot images for how they are perceived by men, and the re-run this study using those images which yielded empirical support.

Stimuli Pilot Study

The present study aimed to identify stimuli images of women which could be used in manipulations for future iterations of Study 2. Images were tested with the purpose of finding a pair depicting the same woman, which differed along the dimensions of perceived sexiness, objectification, human nature, human uniqueness, morality, warmth, and competence when viewed by men.

Methods

Participants. A total of 106 men were recruited through Prolific Academic and were paid 0.5 GBP for their participation. Three men were excluded from analyses involving the OOO, due to the fact that their responses were not compliant with instructions and were outside the possible range of the scale. All participants were over the age of 18 and identified as British nationals.

Procedure. The following was approved by the ethics committee of the University of Edinburgh (<https://osf.io/8tx9z/>). Participants completed the study online. Following informed consent, a series of images of five different women, each shown in everyday clothing and then in their underwear, were presented and rated by participants on measures of perceived sexiness; warmth, competence, and morality (Leach, et al., 2007); human nature and human uniqueness (Bastian, et al., 2012); and objectification (Strelan & Hargreaves, 2005). Each participant viewed and rated a total of ten images, which took an average of 16 minutes to complete.

Materials and Measures. The following materials and measures can be found in Appendix F, as well as online, <https://osf.io/c6keu/> . Reliability information for each scale by target woman can be found in Table 10 (or Table S5 online, <https://osf.io/s6p3k/>).

Images of Women. Five sets of images of women were used, with each set depicting the same woman once in everyday clothing, and once in sexualized/revealing clothing. Three of the women depicted in the images used were thin (Women 1-3), and two were more average in size (Woman 4 and Woman 5). The images to be tested were chosen based on all having neutral backgrounds, and the same woman being depicted in the two desired attire types: underwear/swimwear, and modest everyday clothing.

Perceived Sexiness of Target Woman Item. A single item was used to assess perceived sexiness of the woman in each image, which was “How sexy do you consider the woman above to be?” (1-*Not at all sexy*; 5-*Very sexy*).

Modified Self-Objectification Questionnaire (SOQ). The modified SOQ (OOQ; Strelan & Hargreaves, 2005) was used again for this study to measure objectification, with men rating the relative importance of competence and appearance-based attributes of each woman.

Human Nature and Human Uniqueness Scales. The same scales measuring Human Nature and Human Uniqueness were used here (Bastian, et al., 2012). As in previous studies, these two scales were ultimately

combined to form a single measure of Humanness for each woman, which increased reliability in all cases.

Morality, Warmth, and Competence Scales. The scales assessing Morality, Warmth, and Competence are again those used in previous studies (Leach, et al., 2007).

Table 10.

Cronbach's Alphas for Study Measures by Target Woman

| <i>Woman</i> | <i>Human Nature</i> | <i>Human Uniqueness</i> | <i>Humanness</i> | <i>Morality</i> | <i>Warmth</i> | <i>Competence</i> |
|------------------------------|-------------------------|-----------------------------|------------------|-----------------|---------------|-------------------|
| <u>Non-Sexualized attire</u> | | | | | | |
| 1 | .76 | .78 | .86 | .92 | .94 | .82 |
| 2 | .73 | .67 | .84 | .92 | .94 | .82 |
| 3 | .80 | .75 | .90 | .93 | .93 | .84 |
| 4 | .78 | .74 | .83 | .91 | .94 | .91 |
| 5 | .75 | .72 | .85 | .93 | .93 | .93 |
| <u>Sexualized attire</u> | | | | | | |
| 1 | .69 | .76 | .82 | .93 | .93 | .89 |
| 2 | .64 | .72 | .81 | .93 | .92 | .88 |
| 3 | .74 | .72 | .85 | .94 | .92 | .88 |
| 4 | .60 | .64 | .79 | .91 | .89 | .86 |
| 5 | .74 | .80 | .86 | .90 | .93 | .89 |

Results

All data for this study are open access and can be found online,

<https://osf.io/dbqn3/> .

Woman 1. Descriptive statistics for Woman 1 can be found below in Table 11 (or online in Table S6, <https://osf.io/s6p3k/>). Paired sample t-tests were conducted on all outcome measures to examine differences in how the woman was perceived in sexualized vs. non-sexualized attire¹⁴. Woman 1 differed significantly on all measures in the predicted direction, with the exception of the modified SOQ. In the sexualized image ($M = 4.08$, $SE = .093$) the woman was seen as sexier than in the clothed image ($M = 3.72$, $SE = .098$), $t(97) = -4.405$, $p = .000$, $d = 0.38$. The woman in the sexualized image ($M = 4.72$, $SE = .097$) was perceived as lower in Humanness than she was in the clothed image ($M = 5.09$, $SE = .092$), $t(97) = 6.023$, $p = .000$, $d = 0.39$, but was objectified to a lesser degree ($M = -8.77$, $SE = 1.24$) than in she was in the clothed image ($M = -5.77$, $SE = 1.26$), $t(97) = 3.634$, $p = .000$, $d = 0.24$. The woman was also seen as having lower morality in the sexualized image ($M = 4.48$, $SE = 0.11$) than in the clothed image ($M = 4.81$, $SE = 0.11$), $t(97) = 3.916$, $p = .000$, $d = 0.29$; lower warmth in the sexualized image ($M = 4.92$, $SE = 0.12$) versus the clothed image ($M = 5.26$, $SE = 0.12$), $t(97) = 3.955$, $p = .000$, $d = 0.29$; and lower competence in the sexualized

¹⁴ Post-hoc achieved power range 0.81- 0.97.

imaged ($M = 4.49$, $SE = 0.11$) compared to the clothed image ($M = 4.80$, $SE = 0.10$), $t(97) = 3.445$, $p = .001$, $d = 0.29$.

Table 11.

Descriptive Statistics Woman 1

| | <i>N</i> | <i>Mean</i> | <i>Std. Deviation</i> | <i>Skewness</i> | <i>Skewness SE</i> |
|------------------------------|----------|-------------|-----------------------|-----------------|--------------------|
| <u>Non-Sexualized attire</u> | | | | | |
| Sexiness | 101 | 3.72 | .96 | -.934 | .240 |
| Human Nature | 101 | 5.06 | .95 | -.031 | .240 |
| Human Uniqueness | 101 | 5.11 | 1.01 | -.290 | .240 |
| Humanness | 101 | 5.08 | .91 | .115 | .240 |
| Morality | 101 | 4.81 | 1.10 | -.144 | .240 |
| Warmth | 101 | 5.25 | 1.14 | -.804 | .240 |
| Competence | 101 | 4.79 | 1.01 | -.239 | .240 |
| Objectification | 99 | -5.82 | 12.41 | .766 | .243 |
| <u>Sexualized attire</u> | | | | | |
| Sexiness | 101 | 4.08 | .913 | -.96 | .240 |
| Human Nature | 101 | 4.79 | 1.01 | .053 | .240 |
| Human Uniqueness | 101 | 4.59 | 1.11 | -.070 | .240 |
| Humanness | 101 | 4.69 | .96 | .48 | .240 |
| Morality | 101 | 4.47 | 1.09 | .13 | .240 |
| Warmth | 101 | 4.92 | 1.150 | -.45 | .240 |
| Competence | 101 | 4.48 | 1.09 | .082 | .240 |
| Objectification | 99 | -8.83 | 12.25 | 1.02 | .243 |

Woman 2. Descriptive statistics for Woman 2 can be found in Table 12 (or online as Table S7, <https://osf.io/s6p3k/>). Paired sample t-tests were conducted on all outcome measures to examine differences in how the woman was perceived in sexualized vs. non-sexualized attire¹⁵. Woman 2 differed significantly in the predicted direction on all measures except for Warmth and the modified SOQ. In the sexualized image ($M = 4.15$, $SE = .081$) the woman was seen as sexier than in the clothed image ($M = 3.59$, $SE = .092$), $t(97) = -5.524$, $p = .000$, $d = 0.65$. The woman in the sexualized image ($M = 4.56$, $SE = .092$) was perceived as lower in Humanness than she was in the clothed image ($M = 4.84$, $SE = .091$), $t(97) = 3.906$, $p = .000$, $d = 0.31$, but was objectified to a lesser degree ($M = -8.71$, $SE = 1.30$) than in she was in the clothed image ($M = -6.76$, $SE = 1.32$), $t(97) = 2.693$, $p = .008$, $d = 0.15$. The woman was also seen as having lower morality in the sexualized image ($M = 4.42$, $SE = 0.11$) than in the clothed image ($M = 4.60$, $SE = 0.11$), $t(97) = 2.339$, $p = .021$, $d = 0.17$, and lower competence in the sexualized image ($M = 4.39$, $SE = 0.11$) compared to the clothed image ($M = 4.67$, $SE = 0.10$), $t(97) = 3.26$, $p = .002$, $d = 0.28$.

¹⁵ Post-hoc achieved power range 0.31- 1.00.

Table 12.

Descriptive Statistics Woman 2

| | <i>N</i> | <i>Mean</i> | <i>Std. Deviation</i> | <i>Skewness</i> | <i>Skewness SE</i> |
|------------------------------|----------|-------------|-----------------------|-----------------|--------------------|
| <u>Non-Sexualized attire</u> | | | | | |
| Sexiness | 101 | 3.60 | .91 | -.440 | .240 |
| Human Nature | 100 | 4.82 | 1.01 | -.583 | .241 |
| Human Uniqueness | 100 | 4.92 | .91 | -.039 | .241 |
| Humanness | 101 | 4.82 | 1.03 | -1.082 | .240 |
| Morality | 100 | 4.61 | 1.10 | -.233 | .241 |
| Warmth | 100 | 4.71 | 1.25 | -.342 | .241 |
| Competence | 100 | 4.69 | .95 | .540 | .241 |
| Objectification | 100 | -6.84 | 13.05 | .843 | .241 |
| <u>Sexualized attire</u> | | | | | |
| Sexiness | 100 | 4.15 | .81 | -.52 | .241 |
| Human Nature | 101 | 4.70 | .96 | .43 | .240 |
| Human Uniqueness | 101 | 4.48 | 1.08 | .24 | .240 |
| Humanness | 101 | 4.59 | .94 | .66 | .240 |
| Morality | 101 | 4.44 | 1.06 | .33 | .240 |
| Warmth | 101 | 4.67 | 1.17 | -.06 | .240 |
| Competence | 101 | 4.43 | 1.05 | .13 | .240 |
| Objectification | 101 | -8.82 | 12.82 | .94 | .240 |

Woman 3. Descriptive statistics for Woman 3 can be found in Table 13 (or online as Table S8, <https://osf.io/s6p3k/>). Paired sample t-tests were conducted on all outcome measures to examine differences in how the woman was perceived in sexualized vs. non-sexualized attire¹⁶. Woman 3 differed significantly in the predicted direction on all measures except for Objectification. In the sexualized image ($M = 4.14$, $SE = .10$) the woman was seen as sexier than in the clothed image ($M = 3.16$, $SE = .11$), $t(100) = -9.15$, $p = .000$, $d = 1.00$. The woman in the sexualized image ($M = 4.48$, $SE = .10$) was perceived as lower in Humanness than she was in the clothed image ($M = 4.84$, $SE = .10$), $t(100) = 5.10$, $p = .000$, $d = 0.37$. The woman was also seen as having lower morality in the sexualized image ($M = 4.31$, $SE = .11$) than in the clothed image ($M = 4.72$, $SE = .11$), $t(100) = 4.59$, $p = .000$, $d = 0.36$; lower warmth in the sexualized image ($M = 4.68$, $SE = .12$) versus the clothed image ($M = 4.94$, $SE = .12$), $t(100) = 2.49$, $p = .014$, $d = 0.22$; and lower competence in the sexualized image ($M = 4.32$, $SE = .11$) compared to the clothed image ($M = 4.62$, $SE = .10$), $t(100) = 3.17$, $p = .002$, $d = 0.29$.

¹⁶ Post-hoc achieved power range 0.59- 1.00.

Table 13.

Descriptive Statistics Woman 3

| | <i>N</i> | <i>Mean</i> | <i>Std. Deviation</i> | <i>Skewness</i> | <i>Skewness SE</i> |
|------------------------------|----------|-------------|-----------------------|-----------------|--------------------|
| <u>Non-Sexualized attire</u> | | | | | |
| Sexiness | 101 | 3.16 | 1.07 | -.02 | .240 |
| Human Nature | 101 | 4.87 | 1.06 | -.25 | .240 |
| Human Uniqueness | 101 | 4.83 | .99 | .22 | .240 |
| Humanness | 101 | 4.85 | .97 | .15 | .240 |
| Morality | 101 | 4.72 | 1.13 | -.26 | .240 |
| Warmth | 101 | 4.94 | 1.21 | -.33 | .240 |
| Competence | 101 | 4.62 | .98 | -.09 | .240 |
| Objectification | 101 | -6.83 | 12.15 | .66 | .240 |
| <u>Sexualized attire</u> | | | | | |
| Sexiness | 101 | 4.14 | .85 | -.57 | .240 |
| Human Nature | 101 | 4.61 | 1.05 | .00 | .240 |
| Human Uniqueness | 101 | 4.35 | 1.07 | .09 | .240 |
| Humanness | 101 | 4.48 | .99 | .21 | .240 |
| Morality | 101 | 4.31 | 1.14 | .09 | .240 |
| Warmth | 101 | 4.68 | 1.19 | -.19 | .240 |
| Competence | 101 | 4.32 | 1.09 | .09 | .240 |
| Objectification | 101 | -8.27 | 12.89 | .83 | .243 |

Woman 4. Descriptive statistics for Woman 4 can be found in Table 14 (or online as Table S9, <https://osf.io/s6p3k/>). Paired sample t-tests were conducted on all outcome measures to examine differences in how the woman was perceived in sexualized vs. non-sexualized attire¹⁷. Woman 4 differed significantly on all measures except for Objectification. However, with the exception of how sexy she was thought to be, these differences were in the opposite direction from prediction. In the sexualized image ($M = 3.25$, $SE = .11$) the woman was seen as sexier than in the clothed image ($M = 3.01$, $SE = .10$), $t(100) = -2.73$, $p = .007$, $d = 0.23$. The woman in the sexualized image ($M = 4.85$, $SE = .08$) was perceived as higher in Humanness than she was in the clothed image ($M = 4.51$, $SE = .10$), $t(100) = -4.14$, $p = .000$, $d = 0.38$. The woman was also seen as having higher morality in the sexualized image ($M = 4.67$, $SE = .10$) than in the clothed image ($M = 4.27$, $SE = .11$), $t(100) = -4.20$, $p = .000$, $d = 0.38$; higher warmth in the sexualized image ($M = 4.98$, $SE = .10$) versus the clothed image ($M = 4.42$, $SE = .13$), $t(100) = -5.04$, $p = .000$, $d = 0.48$; and higher competence in the sexualized image ($M = 4.57$, $SE = .10$) compared to the clothed image ($M = 4.35$, $SE = .11$), $t(100) = -2.15$, $p = .034$, $d = 0.23$.

¹⁷ Post-hoc achieved power range 0.63- 0.98.

Table 14.

Descriptive Statistics Woman 4

| | <i>N</i> | <i>Mean</i> | <i>Std. Deviation</i> | <i>Skewness</i> | <i>Skewness SE</i> |
|------------------------------|----------|-------------|-----------------------|-----------------|--------------------|
| <u>Non-Sexualized attire</u> | | | | | |
| Sexiness | 101 | 3.01 | 1.03 | .037 | .240 |
| Human Nature | 101 | 4.53 | 1.06 | -.19 | .240 |
| Human Uniqueness | 101 | 4.53 | 1.04 | -.02 | .240 |
| Humanness | 101 | 4.51 | .95 | .07 | .240 |
| Morality | 101 | 4.27 | 1.13 | -.08 | .240 |
| Warmth | 101 | 4.42 | 1.27 | -.30 | .240 |
| Competence | 101 | 4.36 | 1.08 | -.17 | .240 |
| Objectification | 101 | -5.30 | 12.26 | .44 | .240 |
| <u>Sexualized attire</u> | | | | | |
| Sexiness | 101 | 3.25 | 1.13 | -.16 | .240 |
| Human Nature | 101 | 4.96 | .86 | .55 | .240 |
| Human Uniqueness | 101 | 4.75 | .94 | .54 | .240 |
| Humanness | 101 | 4.85 | .84 | .67 | .240 |
| Morality | 101 | 4.68 | .98 | .08 | .240 |
| Warmth | 101 | 4.98 | 1.04 | -.30 | .240 |
| Competence | 101 | 4.57 | .95 | .06 | .240 |
| Objectification | 101 | -5.90 | 13.53 | .60 | .240 |

Woman 5. Descriptive statistics for Woman 5 can be found in Table 15 (or online as Table S10, <https://osf.io/s6p3k/>). Paired sample t-tests were conducted on all outcome measures to examine differences in how the woman was perceived in sexualized vs. non-sexualized attire¹⁸. Woman 4 only differed significantly on measures of sexiness and warmth. The depiction of the woman in the sexualized image ($M = 2.95$, $SE = .12$) was perceived as sexier than the clothed image ($M = 2.72$, $SE = .11$), $t(99) = -2.07$, $p = .041$, $d = 0.20$. The clothed depiction of the woman ($M = 4.89$, $SE = .13$) was seen as warmer than the sexualized image ($M = 4.44$, $SE = .12$), $t(99) = 3.69$, $p = .000$, $d = 0.36$.

¹⁸ Post- hoc achieved power range 0.51- 0.95.

Table 15.

Descriptive Statistics Woman 5

| | <i>N</i> | <i>Mean</i> | <i>Std. Deviation</i> | <i>Skewness</i> | <i>Skewness SE</i> |
|------------------------------|----------|-------------|-----------------------|-----------------|--------------------|
| <u>Non-Sexualized attire</u> | | | | | |
| Sexiness | 101 | 2.73 | 1.14 | -.12 | .240 |
| Human Nature | 101 | 4.68 | 1.07 | -.01 | .240 |
| Human Uniqueness | 101 | 4.45 | .98 | .42 | .240 |
| Humanness | 101 | 4.57 | .96 | .21 | .240 |
| Morality | 101 | 4.41 | 1.20 | -.34 | .240 |
| Warmth | 101 | 4.89 | 1.28 | -.45 | .240 |
| Competence | 101 | 4.22 | 1.14 | -.09 | .240 |
| Objectification | 101 | -5.74 | 13.26 | .56 | .240 |
| <u>Sexualized attire</u> | | | | | |
| Sexiness | 101 | 2.94 | 1.17 | .19 | .240 |
| Human Nature | 101 | 4.51 | 1.06 | .05 | .240 |
| Human Uniqueness | 101 | 4.53 | 1.11 | .01 | .240 |
| Humanness | 101 | 4.51 | 1.01 | .27 | .240 |
| Morality | 101 | 4.34 | 1.11 | -.18 | .240 |
| Warmth | 101 | 4.45 | 1.19 | -.13 | .240 |
| Competence | 101 | 4.38 | 1.029 | .04 | .240 |
| Objectification | 100 | -7.02 | 13.04 | .69 | .241 |

Discussion

Based on the results of these analyses, both Woman 1 and Woman 3 were perceived as intended on the majority of measures, based on condition. Because the intended effects were larger for Woman 1, these images were chosen to use in the studies conducted going forward.

Study Two, Preliminary Version B

We again attempted to experimentally manipulate the objectification of a women and examine the influence of this manipulation on men's sexual aggression reports. Here, we also took into account the most relevant individual differences in participants' attitudes concerning sexual aggression identified in Study One and employed in Study 2 preliminary version A. This study again aimed to bridge the gap between the correlational data on attitudes already demonstrated, and behavioral outcomes related to sexual aggression, while employing empirically tested images from the stimuli pilot.

In the present study, condition was again treated as the primary predictor, with several manipulation checks concerning perceptions of the target woman. Specifically, these assessed sexiness, objectification, human nature and human uniqueness, and morality, warmth, and competence. Two behavior-based outcome variables were again employed: the Rape Behaviour Analogue (Rudman & Mescher, 2012) and the Sexual Aggression Interest Paradigm (Malamuth, 1989). Variables treated as individual differences here included rape proclivity, unfavourable attitudes towards rape victims, narcissism and psychopathy, and hostile sexism.

Methods

Participants. A total of 193 men were recruited through Prolific Academic and paid £1 for their time. Of these, 31 began the study and did not complete it and were excluded from analyses. An additional 2 participants failed to complete the primary manipulation and were also

excluded, leaving a final sample of 160 men. They were all over the age of 18 and identified as British nationals.

Procedure. The following was reviewed and approved by the ethics committee for the University of Edinburgh (<https://osf.io/23uf5/>). Participants completed the study online. Based on random assignment, 76 men within the final sample were in the control condition, in which they viewed an image of a pre-tested woman in non-revealing everyday clothing and were asked to write about her following the instructions “Please take some time to write about this person. Focus on both positive and negative aspects.” Eighty-four men within the final sample were randomly assigned to the sexualized woman condition and viewed an image of the same woman in underwear, along with the prompt “Please take some time to write about this person’s physical appearance. Focus on both positive and negative aspects.” The writing prompt manipulation was based on that used by Heflick and Goldenberg (2009; Heflick, et al., 2011). In both conditions, the woman was given the following generic description: “The woman below is a recent graduate from a psychology program in the United Kingdom. She enjoys spending time with friends and dating.” All participants then completed a set of manipulation checks relative to the woman they wrote about, including one item assessing how sexy they thought she was, a modified Self Objectification Questionnaire, Scales of Human Nature and Human Uniqueness, and scales of Warmth, Morality, and Competence. Following this, two dependent variables were assessed. Based on random assignment,

80 men completed the Rape Behavior Analogue (Rudman & Mescher, 2012), and 80 completed the Sexual Aggression Interest Paradigm (Malamuth, 1989). Lastly, all participants completed the ASAI, ARVS, SD3 Narcissism and Psychopathy sub-scales, and the ASI Hostile Sexism Scale.

Materials and Measures. All materials and measures are open access, and can be found compiled in Appendix E, or online, <https://osf.io/cdet4/> .

Images of a Woman. The pair of images used in the present study were pilot tested to determine that they were differentially perceived in areas of Human Nature, Human Uniqueness, Warmth, Competence, and Morality of the subject (see Stimuli Pilot).

Perceived Sexiness of Target Woman Item. A single item was used to assess perceived sexiness of the woman in each image, which was “How sexy do you consider the woman you wrote about to be?” (1- *Not at all sexy*; 5- *Very sexy*).

Modified Self-Objectification Questionnaire (SOQ). The modified SOQ (OOQ; Strelan & Hargreaves, 2005) is described in detail in study 1, and differed here only in that respondents were asked to make rankings of the importance of the attributes in relation to the specific woman they wrote about.

Human Nature and Human Uniqueness Scales. The same scales measuring Human Nature ($\alpha = .73$) and Human Uniqueness ($\alpha = .73$) were

used (Bastian et al., 2012). As in Study 2 Preliminary Version A, these scales were ultimately combined to form a single measure of Humanness, $\alpha = .85$.

Morality, Warmth, and Competence Scales. The scales assessing Morality ($\alpha = .92$), Warmth ($\alpha = .90$), and Competence ($\alpha = .87$) are again those used in Study 2 Preliminary Version A (Leach et al., 2007).

Rape Behavior Analogue (RBA). As an outcome variable in this study, we employed a Rape Behavior Analogue based on the sexual imposition method from Rudman and Mescher (2012), using the same images presented in their study. This task involved presenting participants with 17 pairs of images, each containing one violent image and one sexually violent image. Participants were told the following: “Imagine you are working to help select pictures for an upcoming study. Along with other women, the woman you wrote about will be participating in this study. It will involve women being exposed many times to a subset of the images you choose, in order to test perception. For this next task, we will show you two pictures and we would like you to pick the one you think should be used in the women’s study. Pick the one you think should be shown to women many times.” Scores were computed by assigning 0 to choices of violent images, and 1 to sexually violent images, then summing (possible range 0-17).

Sexual Aggression Interest Paradigm. This measure is based on the method used in George and Marlatt (1986), and used the same images as employed in the RBA. Each of the images was shown individually and

rated on appeal (1- *Not at all appealing*; 5- *Very appealing*). Mean scores were computed for overall appeal of sexually violent images and violent images. Each page was also unobtrusively timed, and mean time spent viewing violent images, mean time viewing sexually violent images, and the difference between the two times were computed. These timings were the main outcomes of interest in the paradigm, particularly time spent viewing sexually violent images.

Rape Proclivity (ASAI). The ASAI (Malamuth, 1989) was used to assess attraction to sexual aggression, $\alpha = .89$.

Unfavorable Attitudes Towards Rape Victims (ARVS). Unfavorable attitudes towards victims of rape was assessed using the ARVS (Ward, 1988), $\alpha = .90$.

Short Dark Triad (SD3). The Narcissism ($\alpha = .75$) and Psychopathy ($\alpha = .74$) sub-scales of the SD3 (Jones & Paulhus, 2014) were used, as in Study 2 Preliminary Version A. However, no items were dropped in the psychopathy scale here, as it had acceptable reliability.

Hostile Sexism. Hostile Sexism was assessed using its sub-scale from the ASI (Glick & Fiske, 1996), $\alpha = .94$.

Results

All data for the present study are open access, <https://osf.io/7q5np/>.

Descriptive statistics can be found in Table 16; Pearson's Correlations were computed for all measures and these can be found in Table 17 (or online as Table S11, <https://osf.io/s6p3k/>). Table 18 (or online table S12,

<https://osf.io/s6p3k/>) contains all correlations, broken down by condition.

Independent-samples t-tests were performed, however, no significant differences between conditions emerged. This lack of significant differences included our manipulation check measures: target sexiness, $t(155) = -1.460$, $p = .146$; the SOQ, $t(158) = -.227$, $p = .821$; Human Nature, $t(155) = 1.315$, $p = .191$; Human Uniqueness, $t(155) = 1.682$, $p = .095$; Humanness, $t(155) = 1.586$, $p = .115$; Morality, $t(153) = .381$, $p = .704$; Warmth, $t(156) = .457$, $p = .649$; and Competence, $t(157) = 1.349$, $p = .179$. This also extended to the outcome variables: the RBA, $t(78) = .705$, $p = .483$; and the sexual aggression interest paradigm. This interest paradigm included tests of the mean time spent viewing sexually violent images, $t(78) = .481$, $p = .632$; mean time spent viewing violent images, $t(78) = 1.221$, $p = .226$; mean time difference between viewing violent and sexually violent images, $t(78) = -.678$, $p = .500$; appeal ratings of sexually violent images, $t(78) = .003$, $p = .998$; and appeal ratings of violent images, $t(78) = .051$, $p = .959$. Finally, no differences were found on the measures we categorized as individual differences variables in this study: the ASAI, $t(158) = -.833$, $p = .406$; the ARVS, $t(158) = -.618$, $p = .537$; psychopathy, $t(158) = -.414$, $p = .680$; narcissism, $t(158) = -.047$, $p = .963$; and hostile sexism, $t(158) = .640$, $p = .523$.

Table 16.
Descriptive Statistics, Study 2 Preliminary Version B

| | <i>N</i> | <i>Mean</i> | <i>SD</i> | <i>Variance</i> | <i>Skewness</i> | <i>Skewness SE</i> |
|-----------------------|----------|-------------|-----------|-----------------|-----------------|--------------------|
| Humanness | 157 | 5.13 | 0.91 | 0.82 | -0.03 | 0.19 |
| Human Nature | 157 | 5.14 | 0.97 | 0.95 | -0.14 | 0.19 |
| Human Uniqueness | 157 | 5.13 | 0.96 | 0.91 | -0.05 | 0.19 |
| Morality | 155 | 4.79 | 1.11 | 1.24 | -0.14 | 0.20 |
| Warmth | 158 | 5.28 | 1.07 | 1.15 | -0.53 | 0.19 |
| Competence | 159 | 5.21 | 1.03 | 1.06 | -0.50 | 0.19 |
| Objectification | 160 | -3.83 | 13.08 | 171.15 | 0.46 | 0.19 |
| ASAI | 160 | 1.37 | 0.50 | 0.25 | 2.38 | 0.19 |
| ARVS | 160 | 1.85 | 0.61 | 0.38 | 0.64 | 0.19 |
| Narcissism | 160 | 2.54 | 0.65 | 0.42 | 0.18 | 0.19 |
| Psychopathy | 160 | 2.33 | 0.64 | 0.41 | 0.40 | 0.19 |
| Hostile Sexism | 160 | 3.05 | 1.26 | 1.58 | -0.02 | 0.19 |
| RBA | 80 | 6.96 | 4.25 | 18.04 | 0.38 | 0.27 |
| Time Sexual Violent | 80 | 7.22 | 3.57 | 12.77 | 1.72 | 0.27 |
| Time Violent | 80 | 6.57 | 2.75 | 7.55 | 1.36 | 0.27 |
| Time Difference | 80 | 0.64 | 2.37 | 5.64 | 2.68 | 0.27 |
| Sexual Violent Appeal | 80 | 2.11 | 0.70 | 0.49 | 0.78 | 0.27 |
| Violent Appeal | 80 | 2.25 | 0.62 | 0.39 | -0.12 | 0.27 |

Note. ASAI = Attraction to Sexual Aggression Inventory;
 ARVS = Attitudes Towards Rape Victims Scale;
 RBA = Rape Behavior Analogue.

Table 17.

Overall Correlations Among Variables (Study 2, Preliminary Version B)

| | <i>Humanness</i> | <i>Human Nature</i> | <i>Human Uniqueness</i> | <i>Morality</i> | <i>Warmth</i> | <i>Competence</i> | <i>Objectification</i> |
|---|------------------|---------------------|-------------------------|-----------------|---------------|-------------------|------------------------|
| <u>Manipulation Checks</u> | | | | | | | |
| Humanness | 1 | | | | | | |
| Human Nature | .941** | 1 | | | | | |
| Human Uniqueness | .938** | .766** | 1 | | | | |
| Morality | .680** | .649** | .628** | 1 | | | |
| Warmth | .626** | .650** | .525** | .771** | 1 | | |
| Competence | .736** | .639** | .745** | .735** | .604** | 1 | |
| Objectification | -.068 | -.124 | -.004 | -.019 | -.172* | .050 | 1 |
| <u>Outcome and Individual Differences Variables</u> | | | | | | | |
| ASAI | -.085 | -.067 | -.094 | -.066 | -.015 | -.105 | -.097 |
| ARVS | -.223** | -.196* | -.223** | -.116 | -.018 | -.287** | -.225** |
| Hostile Sexism | -.137 | -.094 | -.165* | -.054 | .081 | -.174* | -.291** |
| RBA | -.049 | -.068 | -.020 | -.024 | -.021 | -.033 | -.331** |
| Narcissism | -.138 | -.134 | -.126 | -.109 | -.072 | -.119 | .049 |
| Psychopathy | -.143 | -.189* | -.082 | -.025 | -.063 | -.112 | -.002 |
| Time Sexual Violent | .011 | .029 | -.010 | .073 | .029 | .015 | .077 |
| Time Violent | .008 | .055 | -.046 | .048 | .029 | .006 | .100 |
| Time Difference | .008 | -.020 | .038 | .054 | .010 | .016 | .001 |
| Sexual Violent Appeal | .037 | .015 | .056 | .054 | -.021 | .025 | -.123 |
| Violent Appeal | .011 | .039 | -.020 | .163 | .254* | .008 | -.197 |

Note. * $p < 0.05$, two-tailed. ** $p < 0.01$, two tailed.

ASAI = Attraction to Sexual Aggression Inventory;

ARVS = Attitudes Towards Rape Victims Scale;

RBA = Rape Behavior Analogue.

Table 18.
Correlations Between Variables Based on Condition (Study 2, Preliminary Version B)

| | Humanness | Human Nature | Human Uniqueness | Morality | Warmth | Competence | OOQ |
|---|----------------|---------------|------------------|---------------|---------------|----------------|----------------|
| <u>Manipulation Checks</u> | | | | | | | |
| Humanness | 1 | | | | | | |
| Human Nature | .929** | 1 | | | | | |
| | .950** | | | | | | |
| Human Uniqueness | .928** | .724** | 1 | | | | |
| | .946** | .797** | | | | | |
| Morality | .697** | .681** | .613** | 1 | | | |
| | .668** | .623** | .645** | | | | |
| Warmth | .695** | .740** | .550** | .785** | 1 | | |
| | .573** | .579** | .506** | .759** | | | |
| Competence | .755** | .640** | .762** | .632** | .540** | 1 | |
| | .717** | .633** | .728** | .820** | .655** | | |
| OOQ | -.011 | -.028 | .005 | .047 | -.038 | .080 | 1 |
| | -.110 | -.196 | -.009 | -.071 | -.278* | .031 | |
| <u>Individual Differences & Outcome Variables</u> | | | | | | | |
| ASAI | -.082 | -.075 | -.079 | -.072 | -.005 | -.099 | -.155 |
| | -.074 | -.050 | -.090 | -.058 | -.017 | -.098 | -.064 |
| ARVS | -.148 | -.123 | -.152 | -.034 | -.034 | -.253* | -.241* |
| | -.278* | -.250* | -.277* | -.186 | .000 | -.309** | -.215* |
| Hostile Sexism | .034 | .049 | .014 | .125 | .150 | -.069 | -.214 |
| | -.315** | -.241* | -.360** | -.232* | .012 | -.279* | -.360** |
| Narcissism | .063 | .013 | .104 | -.011 | -.076 | .057 | .012 |
| | -.296** | -.248* | -.315** | -.188 | -.069 | -.245* | .076 |
| Psychopathy | -.053 | -.153 | .050 | .049 | -.045 | -.022 | -.121 |
| | -.207 | -.212 | -.180 | -.081 | -.075 | -.171 | .083 |
| RBA | -.162 | -.238 | -.047 | -.068 | -.136 | .021 | -.169 |
| | .016 | .050 | -.019 | -.014 | .067 | -.083 | -.417** |
| Time Sexual Violent | -.134 | -.091 | -.163 | .022 | -.138 | -.102 | .220 |
| | .128 | .116 | .131 | .127 | .159 | .085 | -.072 |
| Time Violent | -.119 | -.020 | -.208 | .117 | -.034 | -.041 | .120 |
| | .134 | .107 | .151 | -.028 | .098 | .015 | .041 |
| Time Difference | -.044 | -.123 | .040 | -.140 | -.181 | -.110 | .189 |
| | .064 | .069 | .053 | .197 | .137 | .105 | -.134 |
| Sexual Violent Appeal | -.007 | -.062 | .044 | .118 | -.026 | .056 | -.011 |
| | .074 | .074 | .068 | .094 | -.017 | .008 | -.224 |
| Violent Appeal | -.176 | -.125 | -.210 | .056 | .057 | -.057 | -.118 |
| | .163 | .164 | .151 | .256 | .397* | .051 | -.272 |

Note. * $p < 0.05$, two-tailed. ** $p < 0.01$, two-tailed. Regular font is control woman condition, bold is sexualized Woman Condition. ASAI = Attraction to Sexual Aggression Inventory; ARVS = Attitudes Towards Rape Victims Scale; RBA = Rape Behavior Analogue.

Discussion

Our correlations largely replicate from Study 1, Study 2, and Study 2 Preliminary Version A for the relevant variables, where applicable, in Preliminary Study 2b. However, there were again no group differences based on condition found. This led to the conclusion that there may be a theoretically relevant problem with asking about women in general in relation to these types of outcome variables, which in practice apply to a specific woman. Therefore, we aimed to address this issue in the methodology employed in Study 2 (see Chapter 2).

Across these preliminary studies, as well as in the central study they led up to, certain variables treated as covariates here offer fruitful theoretical avenues for future empirical work. In particular, hostile sexism and narcissism consistently correlated in interesting ways with variables treated here both as predictors (dehumanization and objectification) and outcomes (sexual aggression measures). It is possible that these may indeed operate in practice as moderators of men's inclinations towards sexual aggression such that men who are high in narcissism and/or hostile sexism are more likely to engage in both dehumanization and sexual aggression. Alternatively, they may simply represent predictors of sexual aggression in their own right, or with dehumanizing perspectives about women acting as moderators. The latter would be consistent with recent work (Methot-Jones, Book, & Gauthier, 2019) showing another of our covariates, sub-clinical psychopathy, is

associated with sexist, violent, and sexually violent attitudes towards women through the mechanism of dehumanization.

Chapter 4- Lab Preliminary Pilots 1-3

Following the promising results of Study 2 (Chapter 2), we planned to conduct a lab-based study in which dehumanization and objectification could be manipulated more realistically. The studies reported in this chapter, as well as the one to follow, all represent work done in service of preparation and planning for this.

Facebook Pilot Phase 1

We conducted three pilot studies with the ultimate aim of developing an ecologically valid method of measuring online intrusive behavior to be used in the laboratory, employing the social media site Facebook. Online forms of sexual aggression are an emerging manifestation resulting in growing research interest (discussed in depth in Chapter 7). This informs the choice to use social media as the particular methodological tool for examining sexual aggression in the present work. In doing so we aimed to create a versatile method which would have the potential to tap both these particular (online) manifestations of sexual aggression and the broader range of behaviors they are part of.

Facebook in particular among existing popular social media outlets was chosen largely for practical reasons related to the planned larger study. These included the fact that Facebook remained a common platform for college aged men at the time, and that while existing in app form, it could be naturalistically accessed on a computer (as opposed to the arguably more popular Instagram or even Twitter, which are more generally used on mobile

devices). Since we aimed to ultimately employ visual video data from a desktop computer, this was an important practical feature. Additionally, Facebook's messenger application activity is visible on the computer display, making data collection in the chat more accessible (unlike the layout for direct messaging in Instagram). Finally, in service of looking at dehumanization and sexual aggression processes in particular, Facebook has the potential to present and manipulate both humanizing and sexualizing information about the subject of a profile, while remaining relatively neutral in terms of primes associated with the site itself (e.g. it is not a dating specific app such as Tinder).¹⁹

The purpose of this first study was largely exploratory, as we sought to first validate the believability and realism of a female account ("Ellie James") we created for male participants to interact with via their existing Facebook accounts, and as a secondary aim to assess variability in men's behaviour relative to that account.

Methods

Participants. A total of 18 men over the age of 18 with Facebook accounts were recruited through an advertisement on the University of Edinburgh's website, "MyCareerHub," and paid £3 for their participation.

¹⁹ Notably, while Facebook was used here, future iterations of the final procedure (see Chapter 6) could be easily adapted for use on other social media sites or online contexts such as forums. Indeed, we would expect that Instagram would be the most practical and relevant in coming years for this type of paradigm, and differences in effects across platforms yield interesting potential future research directions. We plan to ultimately create such a companion site for "Ellie James."

Procedure. The following was reviewed and approved by the ethics committee of the University of Edinburgh (<https://osf.io/na5rq/>). Participants signed up for a time to come to the lab individually to complete a study concerning “online dating interactions and early impression formation” in October and November 2017. Upon arrival, they were walked past at least one closed cubicle door that was marked as occupied, to a cubicle containing a computer station where they were to work. Following informed consent, participants were asked to sign into their own Facebook accounts and told that they would need to send a friend request to their study partner, “Ellie James” who was in another room, in order to use Facebook messenger to chat. They were told that she would be the one to contact them via messenger. They were also told that it could take a few minutes because their partner needed to read through a set of study guidelines. The participants were then left alone for either 8 minutes ($n = 4$), 6 minutes ($n = 11$), or 5 minutes ($n = 3$) with no further instructions. During this time, the researcher went into the adjacent cubicle, opening and closing the door audibly, and immediately accepted the friend request sent to “Ellie James” from the participant. Following the set time lapse, the researcher returned and explained the nature of the study. Participants were told of the intention to examine their browsing history (using a Facebook specific search term), and that they could delete this history now or object to its use at any time (none did). A set of questions about the study experience and believability was then administered verbally, followed by participants responding to these

items in writing. They then received a debriefing form, as well as a pre-paid envelope containing a form for further provision of fully anonymous feedback about their experience (none of these were returned).

Materials and Measures. All materials and measures used in the present study can be found compiled in Appendix G, as well as online, <https://osf.io/xtfc7/> .

Intrusive Online Behavior. A Facebook account under the name “Ellie James” was created for the purposes of this and future studies (<https://www.facebook.com/ellie.james.58760608>). The account uses images with the consent of the woman they actually depict, and purportedly belongs to a single American exchange student at the University of Edinburgh studying English Literature. The account has friends, gets likes from other fake and real accounts, and has and an active timeline of posts made every 1-4 days. This account has been altered in response to feedback from participants within this study and continues to be maintained in an active and realistic manner. Participant behavior relevant to this account was measured by searching the browsing history of the computer (which was cleared before each session) using the term “Facebook.” Any resulting pages from this history search were documented via making screenshot images.

Some unexpected outcomes during the creation process lend support to the ecological validity of this account. Within a two-day period of the initial launch of the account, while trying to accrue friends, the researchers accepted unsolicited friend requests. During this time, the account received

over 70 unsolicited male friend requests, 15 attempts to chat via messenger from unknown men, 3 unknown men commenting and liking posts, and two invitations to groups that contained degrading content, including one pornographic group, and one called “smash or pass.” After this two-day period the researchers decided to delete all unsolicited friends of the account and stop accepting any new ones. Despite this, as of May 2019, the account has received 11 more intermittent attempts to chat from strangers and 65 more unsolicited friend requests, the majority of which came from men. Additionally, one participant from the main lab study has attempted to chat with the account (e.g. contact the female researcher) twice since the time of his appointment (sending “hello baby,” and later, a wave).

Experience Items. In addition to recording a subjective assessment of surprise upon revealing that the Facebook account participants friended was not real, we asked a set of 6 qualitative questions about participants’ experience. These primarily concerned how believable the scenario was (e.g. “What, if any, aspects of this scenario made you suspicious?”) which were used in a data driven manner to make changes in this and the next iteration of this study. For ethical reasons, we also assessed their comfort with the experience and potential future directions (e.g. “Were you uncomfortable at any time while you were participating in this study?”).

Results

Because the use of screenshots creates data which by its nature cannot be full anonymized, the data for the present study is not open access. The

results of this study are largely exploratory: we sought to first validate the believability and realism of the account, and then as a secondary aim to assess variability in men's behavior. Because this second aim was dependent on men believing the account belonged to a real woman who was a stranger to them, we did not ultimately collect enough data in this phase of piloting to reliably determine variability, although some men did engage in intrusive exploration of the account. The use of screenshots was also limiting to the amount of information we were able to assess about behavior, and this methodological weakness is addressed in the second phase of piloting, wherein we switch to screen capture video (having asked participants in this phase about whether they would hypothetically be comfortable with this type of methodology and received unanimous assent).

We did collect responses that were applied to altering the methodological design to ultimately successfully increase belief in the account to an acceptable level. The procedure was modified in a responsive way within this study for later participants based on feedback from early participants, with seven men at the end of the data collection phase ultimately expressing belief that the account was real. These changes included sending a single message from "Ellie James" that said "I need a minute" immediately after accepting the friend request, insuring the account remains online throughout the time lapse so that participants receive a read receipt should they attempt to initiate chat, the researchers talking out loud to the empty cubicle next door before and after accepting the request, and the

change from the original 8 minute lapse to the final 5 minutes. We also increased the number of friends the account has, posted on the timeline more, and insured that account materials had likes and comments by creating several other fake accounts and recruiting help from real account holders.

Discussion

While unable to reliably assess variability in men's behavior, the present study did successfully validate the account of "Ellie James" as being perceived by men as realistic for use in further development of the online intrusive behavior paradigm. A second phase of piloting was undertaken next in order to build directly on this work.

Facebook Pilot Phase 2

The present study represents the second of three pilot studies conducted in service of developing an online intrusive behavior paradigm for use in a laboratory setting. Our aims in this phase of piloting were to confirm that variability exists in men's behavior relative to the Facebook account belonging to "Ellie James," and to do so within a methodology that more closely resembled the planned main study this paradigm would be used in.

Methods

Participants. A total of 19 men over the age of 18 with Facebook accounts were recruited through an advertisement on the University of Edinburgh's website, "MyCareerHub," and paid either £3 at the onset of recruitment ($n = 5$) or £5 later in the recruitment phase ($n = 14$). This change in payment was due to low response to the original advertisement.

Procedure. The following was reviewed and approved by the ethics committee of the University of Edinburgh (<https://osf.io/dgqcx/>). Participants signed up for a time to come to the lab to complete a study concerning "personal preferences, online dating interactions, and early impression formation" in November and December 2017. Upon arrival, they were walked past at least one closed cubicle door that was marked as occupied, to a cubicle containing a computer station where they were to work. Following informed consent, participants completed a series of filler questionnaires online, to increase believability of the overall scenario; these largely concerned meat consumption related personal preferences and were not

analysed. They were then asked to sign into their own Facebook accounts and told that they would need to send a friend request to their study partner, “Ellie James” who was in another room, in order to use Facebook messenger to chat. They were told that she would be the one to contact them first via messenger. They were also told that it could take a few minutes because she needed to read through a set of study guidelines. The participants were then left alone for 5 minutes. During this time, the researcher went into the adjacent cubicle, opened and closed the door audibly, immediately accepted the friend request sent to “Ellie James” from the participant, and sent them a message stating “I need a min.” Following the 5-minute time lapse, the researcher returned and explained the nature of the study. Participants were told of the intention to examine their browsing history (using screen capture video), and that they could delete this history now or object to its use at any time. A set of questions about the study experience and believability was then administered verbally, followed by participants responding to these items in writing. They then received a debriefing form and the study concluded.

Materials and Measures. All materials and measures for the present study can be found compiled in Appendix G, as well as online, <https://osf.io/xtfc7/>.

Pre-Chat Items. The filler questionnaires included an item asking for self-classification with regards to eating habits (e.g. vegan, pescatarian, etc.), a series of items asking current mood (positive and negative affect scale;

PANAS; Watson, Clark, & Tellegen, 1988), and three scales concerning meat consumption attitudes (Loughnan, Bastian, & Haslam, 2010a). These were included due to feedback from the previous pilot about the seemingly suspicious nature of a study that only involved a chat, and in order to better emulate the planned future study this methodology was piloted for use in.

Intrusive Online Behavior. Variability in men's intrusive behavior was assessed by coding their activity related to the account of "Ellie James," which was the same account used in Facebook Pilot 1. Participants' behavior related to this account was examined using screen capture technology, which unobtrusively created a video file of all activity on the computer screen throughout the study session. Behavior was then coded by the primary researcher according to the following scheme, then summing to create an activity score: entering the profile or returning to the profile main page (1 point); changing pages within the profile (1 point); every ten second period spent being active on a given page within the profile (e.g. scrolling etc.) (1 point); entering an album other than the summer album, not including clicking individual images (2 points); accessing individual images including profile picture images (2 points); entering summer album (not clicking individual images) (3 points); accessing individual images within the summer album (3 points). Coding was limited to a five-minute period, starting either from the point when the friend request was accepted, or when the participant entered the account.

Experience Items. Five of the six items used in Facebook Pilot 1 which remained relevant (e.g. Did you believe this was a real Facebook account?) were again administered here, first verbally and then in writing. The omitted item related to the potential use of screen-capture.

Results

Because the video data collected in this study by its nature cannot be fully anonymized, it is not open access. However, all coding data which resulted from these video files can be found online, <https://osf.io/zbes3/>. In this phase of piloting, participants reported believing that this was a real account the majority of the time, with only one-man expressing suspicion after having gone into the account. Based on the coding scheme, the majority of men had scores of under 10 ($n = 13$), with 4 men not accessing the account at all. However, a second group of men fell within the range of 17-33 ($n = 5$), and a single man had a score of 137.

Discussion

In addition to further confirming that men believe that the account of “Ellie James” is real, this second pilot was successful in demonstrating that variability exists in men’s behavior relative to a Facebook account they believe to belong to a female stranger. Indeed, based on the distribution of the data collected here, the pattern of men’s variability mirrors that which could be expected in the population for supporting the claim that this paradigm is analogous to intrusive behavior. Additionally, the use of screen capture software and framing the interaction with the account as embedded

within questionnaires was successful in confirming the logistics of the present methodology in practice, prior to implementation on a larger scale.

Chat Content Pilot

The present study aimed to pilot test materials to be used in a chat paradigm which would be conducted using Facebook messenger in conjunction with the Facebook intrusive behavior paradigm, whose development is discussed in the two preceding pilot studies. Specifically, we sought to compile a set of comments and jokes that could be ostensibly sent to “Ellie James,” by male participants in the lab setting. The planned chat methodology was based on previous work using a computer harassment paradigm (Diehl, et al., 2012; Siebler, et al., 2008; Erdmann via Bohner, personal communication, 2018), with the intention to make alterations that would increase ecological validity, in particular by using existing social media as the means of communication. This study also had the purpose of validating the materials to be used with an English-speaking sample, having translated the originals from the German used by Diehl et al. (2012), and Siebler et al. (2008). We sought a final set of materials which would include a set of 10 critical quadruplets that would each include a sexist joke, neutral joke, sexist comment, and neutral comment. For these quadruplets, we aimed to match the two jokes on funniness, and the two sexist items on how much their content represented unwanted sexual attention. Additionally, we aimed to compile non-critical pairs of jokes and comments to increase believability within the final paradigm that the participant had been randomly assigned to be the “sender,” (see Chapter 6 for details of the full methodology).

Methods

Participants. Three groups of participants that identified as adult heterosexual British nationals completed the study for £0.75 online. The first group viewed comments, and initially included 50 people. Of these, one was excluded for indicating they were not over the age of 18, and one for indicating that they were not heterosexual, leaving 48 participants (23 male). The observed power for this group, based on an average effect size of $d = 0.5$ was 0.92. The second two groups both viewed a series of jokes online, which were different for each group, and initially included a total of 105 people. Of these, one was excluded for indicating that they were not over the age of 18, and two for failing to complete the survey items, leaving 102 people who viewed jokes. These were broken down into two separate groups of $n = 50$ (26 men; observed power based on an average effect size: 0.93) and $n = 52$ (25 men; observed power based on an average effect size: 0.94) whose members saw different joke sets.

Procedure. The following was reviewed and approved by the ethics committee of the University of Edinburgh (<https://osf.io/q7g59/>). Participation took place online. Following informed consent, all participants were asked to verify their gender, sexuality, and age, and given the instructions to read the comments or jokes that followed and respond to the accompanying items.

Comments Group. Participants in this group read a series of fifty-three comments that represent things men might say to women online, and that were expected to vary in intention and perception (e.g. “I like the colour of your eyes; “I wouldn’t mind being the reason for your sleepless night”).

Following each comment, participants were asked to rate it on three qualities (1- *not at all*; 7- *extremely*): sexually harassing content, sexism, and hostility. The survey took an average of 11.13 minutes to complete for this group.

Jokes Groups. Participants in the two jokes groups all saw a total of 17 jokes that were expected to be perceived as sexist towards women (e.g. “When does a woman lose 99% of her intelligence? When her husband dies”), 17 jokes that were expected to be perceived as neutral (e.g. “Why don’t aliens eat clowns? Because they taste funny”), and 12 jokes that were expected to be perceived as sexist towards men (e.g. “Why do men like smart women? Opposites attract”). The two groups saw the same number and types of jokes, but the specific jokes in these categories differed by group. Regardless of group, following each joke, participants rated its quality on each of four qualities (1- *not at all*; 7- *extremely*): funniness, sexually harassing content, sexism, and hostility. This breakdown into two groups was done in the interest of reducing participant fatigue, with Group 1 taking an average of 15.38 minutes, and Group 2 taking an average of 18.13 minutes.

Materials and Measures. All materials and measures for the present study can be found compiled in Appendix H, as well as online,

<https://osf.io/ua2mk/> .

The comments and jokes that were sexist towards women, and those that were neutral, were drawn from previous work using a computer harassment paradigm (Siebler, et al., 2008; Diehl, et al., 2012; Erdmann via Bohner, personal communication, 2018). These were translated from

German to English and consolidated to include for testing only those which continued to make sense in English for testing. Some slight wording changes were made in service of sounding more natural in this population. The jokes that were sexist towards men were compiled from an internet search. Single items were used to assess comment and joke content perceptions, including how sexually harassing, sexist, hostile, and funny (where applicable) each was. Mean scores were computed for each comment or joke on the qualities assessed. Due to high correlations across all comments and joke types ($r_s > .78$) between the items assessing sexually harassing content, sexism, and hostility, these were combined to create a composite score of unwanted sexual attention.

Results

All data for the present study are open access, and can be found online (Jokes data <https://osf.io/g8s49/> and comments data, <https://osf.io/r3p7q/>).

Jokes were grouped based on their mean scores of funniness and unwanted sexual attention to create ten critical quadruplets that included one sexist joke about women, one sexist comment, one neutral joke, and one non-sexist comment. For these groups, the two jokes were matched for funniness, and the two sexist items (one joke and one comment) were matched on unwanted sexual attention. In addition, four non-critical trial groups were compiled. Two of these contained a sexist joke about men and a neutral joke matched for funniness, and two contained a neutral joke and neutral comment, matched on unwanted sexual attention.

All reported Bayes analyses that follow, both for the present chapter and those which follow, were calculated using R code from Palfi (as cited in McLatchie, 2019) and here use the range-of-scale heuristic in determining the predicted theory. Bayes interpretations are based on Lee and Wagenmakers (2013). For the selected critical materials, overall funniness ratings did not differ between the sexist ($M = 2.81$, $SE = 0.14$) and non-sexist jokes ($M = 2.89$, $SE = 0.11$), $t(9) = 1.41$, $p = 0.19$, $r = 0.10$, Cohen's $d = 0.21$. The Bayes factor represented moderate evidence for the null, $B_{H(0, 3)} = 0.10$, $RR [0.75, 3.25]$. By contrast, and as intended, the overall ratings of unwanted sexual attention differed between the sexist ($M = 4.52$, $SE = 0.22$) and non-sexist jokes ($M = 1.31$, $SE = 0.07$), $t(9) = 17.33$, $p < .001$, $r = 0.95$, Cohen's $d = 6.38$, although the Bayes factor represented inconclusive evidence for the alternative, $B_{H(0, 3)} = 1.14$, $RR [2.25, 4.8]$. Finally, also as intended, the sexist jokes ($M = 4.52$, $SE = 0.22$) were rated similarly on unwanted sexual attention to the sexist comments ($M = 4.48$, $SE = 0.21$), $t(18) = 0.14$, $p = 0.89$, $r = 0.03$, Cohen's $d = 0.06$. The Bayes factor indicated moderate evidence for the null, $B_{H(0, 3)} = 0.11$, $RR [0.75, 3.25]$.

Differences between respondents based on their gender was also examined for the critical materials. For neutral jokes, men ($M = 2.87$, $SE = 0.09$) and women ($M = 2.91$, $SE = 0.15$) did not differ in their ratings of funniness, $t(9) = 0.39$, $p = 0.71$, $r = 0.05$, Cohen's $d = 0.11$; the Bayes factor represented strong evidence for the null, $B_{H(0, 3)} = 0.05$, $RR [1.25, 4.75]$. Additionally, men ($M = 1.25$, $SE = 0.07$) and women ($M = 1.37$, $SE = 0.08$)

did not significantly differ on ratings of unwanted sexual attention for neutral jokes, $t(9) = 1.83$, $p = 0.10$, $r = 0.25$, Cohen's $d = 0.51$. The Bayes factor represented moderate evidence for the null, $B_{H(0, 3)} = 0.23$, $RR [2, 6.75]$.

However, men found sexist jokes to be funnier ($M = 3.18$, $SE = 0.16$) than did women ($M = 2.44$, $SE = 0.15$), $t(9) = 5.38$, $p < .001$, $r = 0.59$, Cohen's $d = 1.48$, and the Bayes factor represented extremely strong evidence for the alternative, $B_{H(0, 3)} = 171,019.70$. Men also rated sexist jokes lower on unwanted sexual attention ($M = 4.30$, $SE = 0.26$) than did women ($M = 4.73$, $SE = 0.18$), $t(9) = 3.84$, $p = .004$, $r = 0.29$, Cohen's $d = 0.60$, with the Bayes factor indicating extremely strong evidence for the alternative, $B_{H(0, 3)} = 117.32$. For sexist comments, men had lower ratings of unwanted sexual attention ($M = 4.21$, $SE = 0.22$) than women ($M = 4.72$, $SE = 0.20$), $t(9) = 5.33$, $p < .001$, $r = 0.36$, Cohen's $d = 0.77$, with the Bayes factor representing extremely strong evidence for the alternative, $B_{H(0, 3)} = 92,536.04$. Despite these differences, both gender group means were above the midpoint of the scale, indicating a consensus that these jokes and comments indeed were perceived to contain unwanted content, regardless of respondent gender.

Lastly, for neutral comments, men gave lower ratings of unwanted sexual attention ($M = 1.51$, $SE = 0.06$) than did women ($M = 2.07$, $SE = 0.08$), $t(9) = 4.62$, $p < .001$, $r = 0.79$, Cohen's $d = 2.54$, with the Bayes factor representing extremely strong evidence for the alternative $B_{H(0, 3)} = 3,416.33$. Again, however, these were well below the midpoint of the scale for both groups, retaining evidence for their overall neutrality.

Discussion

Based on our results, this study was successful in meeting its two primary aims: (1) validating the translated materials with an English-speaking sample, and (2) compiling the materials such that their content met the necessary criteria for use in the planned lab study. We identified a set of 10 critical quadruplets of jokes and comments, matched as intended on funniness (where applicable), and unwanted sexual attention. We also successfully identified non-critical sets of joke and comment materials for use in the final paradigm.

General Discussion

The three studies reported in this chapter each provide support for the methodology later employed in the lab study reported in Chapter 6. The Facebook Pilots (Phase 1 & 2) together validated the use of the Facebook account of “Ellie James” as realistic to men and, importantly, demonstrated that there exists measurable variability in their behavior relevant to that account when the paradigm is used embedded within methodology similar to the planned study, on a miniature scale. The Chat Content pilot additionally validated materials, using both men and women, to be employed alongside the intrusive behavior paradigm in a Facebook messenger-based chat paradigm.

Chapter 5- Video Validation Pilots 1-3

In planning the lab study reported in Chapter 6, we hoped to be able to ultimately experimentally manipulate men's dehumanization and objectification of the women they believed they would be interacting with. Following Study 2's failure to elicit mean group differences, but promising differences in correlations based on condition, we sought to use a much stronger manipulation. This chapter reports a series of three studies undertaken with the aim of validating realistic video stimuli that could be used to this end. The tested video stimuli were created for the present work and depict the same woman whose images are used throughout the "Ellie James" Facebook account giving an introduction of herself. In each study the videos are designed in pairs to be as similar as possible overall- showing the same woman delivering the same information to the camera- but differing such that she is sexualized in one and not sexualized in the other. In the case of each of the studies that follow we expected to find group differences based on condition, such that men who viewed the sexualized video, as opposed to the non-sexualized video, would attribute less human nature, human uniqueness, morality warmth and competence, and greater sexiness and objectification to the woman depicted.

Video Validation Pilot 1

The present study initiates a series of three very similar studies all conducted with the aim of creating and validating an especially strong experimental manipulation of men's dehumanization and objectification of a

specific woman, “Ellie James,” based on manipulations from the literature combined with the realism of video. This version was conducted online.

Methods

Participants. We sought to recruit adult male heterosexual British nationals, and a total of 59 participants initially completed the study. Of these, 16 were excluded: one for identifying as female, one for identifying as asexual, and fifteen for failing to watch the video, leaving 42 men. Thus, additional sampling was conducted prior to analyses in order to increase power. Forty-four participants completed a second phase of sampling, however, eight of these were excluded: one for not indicating sexuality, four for failing to watch the video, and two for watching the video without the sound. This left an additional 36 men, and a final combined sample of 78 men. The observed power in this study based on an effect size of $d = 0.5$ was 0.87.

Procedure. The following was reviewed and approved by the ethics committee of the University of Edinburgh (<https://osf.io/j6cy2/>). Participants completed the study online and were paid £0.50 for their time. Following informed consent, they were asked to confirm their gender and sexual orientation. They then were then randomly assigned to a condition, wherein they were asked to watch one of two videos depicting “Ellie James,” representing either a sexualized condition ($n = 42$) or a non-sexualized condition ($n = 36$). They then responded to a series of questionnaires about their perceptions of the woman they viewed in the video. These included an

item assessing how sexy they found her to be; scales of human nature and human uniqueness (Bastian, et al., 2012); measures of her perceived warmth, competence, and morality (Leach, et al., 2007), and the Other Objectification Questionnaire (Strelan & Hargreaves, 2005). Prior to these questionnaire items, the second group sampled was additionally asked to indicate if they watched the video, and if they watched the video with sound. Lastly, they were debriefed, and the study concluded.

Materials and Measures. All materials and measures for the present study can be found compiled in Appendix I, as well as online, <https://osf.io/w3jmv/> .

Video Stimuli. The two videos depicting “Ellie James” both show the same woman delivering the following script while facing a camera: “Hi, my name is Ellie, and I am from Atlanta, Georgia. I am at Edinburgh for the semester, and I really like it so far. I study English literature and am starting my third year now. I’ve probably had a bit too much fun trying different pubs since I got here, but I really love to travel and meet new people. I also love my family, the outdoors, and going to music festivals.” The videos differed in their depictions based only on the attire of the woman. In the sexualized condition (which can be viewed here: <https://osf.io/5a2bk/>), she is shown wearing a low-cut red top and has on makeup, while in the non-sexualized condition (which can be viewed here: <https://osf.io/qkh28/>), she is wearing a blue t-shirt and no makeup. The two videos were created with some successful manipulations used in past research in mind, which also present

participants with images or videos of the same woman as sexualized vs. non-sexualized (e.g. Bernard et al., 2015, study 2; Holland & Haslam, 2013; Loughnan et al., 2013; Pacilli et al., 2017; Vasquez et al., 2017).

Perceived Sexiness of Target Woman. A single item was used to assess perceived sexiness Ellie James, which was “How sexy do you consider the woman in the video to be?” (1-*Not at all sexy*; 5-*Very sexy*).

Human Nature and Human Uniqueness. Four items assessed human nature items (e.g., “(this woman) Is emotional, responsive, and warm”; Bastian et al., 2012), $\alpha = .74$. Similarly, there were four human uniqueness items (e.g., “(this woman) Is rational, logical, and intelligent”; Bastian, et al., 2012), $\alpha = .77$. Both sets of items were measured from 1 (*Not at all*), to 7 (*Very much so*) with higher scores reflecting greater attribution of human traits.

Morality, Warmth, and Competence. A set of nine items assessed the woman in the video’s warmth, competence, and morality (Leach et al., 2007). Warmth items asked participants the extent to which they considered the woman to be likeable, warm, and friendly ($\alpha = .92$); competence items assessed perceptions of how intelligent, skilled, and competent the woman was ($\alpha = .86$); and morality items how asked how honest, sincere, and trustworthy she was ($\alpha = .81$); all were rated on a scale from 1 (*Not at all*) to 7 (*Very much so*), with higher scores reflecting greater attribution of the given trait.

Objectification. Strelan and Hargreaves (2005) modified the Self Objectification Questionnaire (Noll & Fredrickson, 1998) to measure the objectification of others. This version is known as the Other Objectification Questionnaire (OOQ) and was employed here. This asked participants to rank the relative importance of ten appearance and competence attributes on their evaluation of the body of the woman in the video. Participant scores were calculated by separately summing the appearance and competence ranks, then subtracting the sum of the competence ranks from the sum of the appearance ranks, producing a score ranging from -25 to 25, with higher scores reflecting greater objectification. For the purposes of analyses and ease of interpretation, 25 was added to all scores to create a positive number.

Results

All data for this study are open access, <https://osf.io/pj4hd/>. All reported Bayes analyses were calculated using the range-of scale heuristic in determining the predicted theory. Interpretations of Bayes factors are based on benchmarks from Lee and Wagenmakers (2013). Tests were first run to determine if there were any differences between the initial and supplementary samples in their responses to Ellie James. These first of these revealed that participants from the initial sample rated Ellie as less moral ($M = 4.79$, $S.E. = .20$) than participants from the supplementary sample ($M = 5.34$, $S.E. = .15$), $t(76) = 2.12$, $p = .04$, Cohen's $d = 0.49$, $r = 0.24$, although the Bayes factor indicated inconclusive evidence of this, $B_{H(0, 3)} =$

1.57, RR [1.5, 5]. There was moderate evidence that participants from the initial sample rated her and less warm ($M = 5.44$, $S.E. = .16$) than participants from the supplementary sample ($M = 5.99$, $S.E. = .15$), $t(76) = 2.48$, $p = .02$, Cohen's $d = 0.56$, $r = 0.27$, $B_{H(0, 3)} = 3.11$, RR [0.5, 3.25]. No other differences based on sample groups emerged ($ps > .07$). Because of the small effects found, and the fact that morality and warmth were less central interests than the other measures (relative to dehumanization and objectification in particular), the two samples were justifiably combined in further analyses.

Next, differences based on video condition were examined on the outcome variables of sexiness, human nature, human uniqueness, morality, warmth, competence, and objectification. These revealed that perceptions of Ellie James only differed between the two videos on perceived sexiness, with moderate evidence that participants who viewed the sexualized video rating Ellie as sexier ($M = 3.67$, $S.E. = .18$) than participants who viewed the non-sexualized video ($M = 3.08$, $S.E. = .18$), $t(76) = 2.31$, $p = .02$, Cohen's $d = 0.53$, $r = 0.26$, $B_{H(0, 2)} = 3.45$, RR [0.5, 2.5]. Scores on objectification approached significance in the predicted direction, with participants who viewed the sexualized video engaging in more objectification of Ellie ($M = 24.26$, $S.E. = 2.22$) than participants who watched the non-sexualized video ($M = 18.75$, $S.E. = 1.76$), $t(76) = 1.90$, $p = .06$, Cohen's $d = 0.44$, $r = 0.21$. However, the Bayes factor indicated that the data represented inconclusive evidence of this difference, $B_{H(0, 25)} = 1.33$, RR [8, 35].

There were non-significant differences in the attribution of human nature between participants who viewed the sexualized video ($M = 5.27$, $S.E. = 0.17$) and those who viewed the non-sexualized video ($M = 5.24$, $S.E. = 0.17$), $t(76) = 0.10$, $p = .917$, Cohen's $d = 0.03$, $r = 0.01$; the Bayes factor indicated moderate evidence for the null, $B_{H(0, 3)} = 0.11$, $RR[0.75, 3.25]$. For attribution human uniqueness, participants who viewed the sexualized video ($M = 5.27$, $S.E. = 0.17$) did not differ from those who viewed the non-sexualized video ($M = 4.93$, $S.E. = 0.18$), $t(76) = 1.36$, $p = .178$, Cohen's $d = 0.31$, $r = 0.15$; the Bayes factor provided inconclusive evidence for the null, $B_{H(0, 3)} = 0.38$, $RR[1, 3.5]$. There were non-significant differences in the attribution of morality between participants who viewed the sexualized video ($M = 5.02$, $S.E. = 0.19$) and those who viewed the non-sexualized video ($M = 5.08$, $S.E. = 0.18$), $t(76) = -0.25$, $p = .801$, Cohen's $d = 0.05$, $r = 0.03$; the Bayes factor indicated strong evidence for the null, $B_{H(0, 3)} = 0.10$, $RR[0.75, 3.25]$. There were also non-significant results concerning warmth between participants who viewed the sexualized video ($M = 1.05$, $S.E. = 0.16$) and those who viewed the non-sexualized video ($M = 0.99$, $S.E. = 0.16$), $t(76) = 0.35$, $p = .724$, Cohen's $d = 0.08$, $r = 0.04$; the Bayes factor provided strong evidence of the null, $B_{H(0, 3)} = 0.08$, $RR[2.75, 7.75]$. Lastly for competence, participants who viewed the sexualized video ($M = 5.16$, $S.E. = 0.17$) did not differ from those who viewed the non-sexualized video ($M = 4.78$, $S.E. = 0.17$), $t(76) = 1.57$, $p = .121$, Cohen's $d = 0.36$, $r = 0.18$; the Bayes factor indicated inconclusive evidence for the null, $B_{H(0, 3)} = 0.52$, $RR[1.5, 5]$.

Discussion

This study failed to elicit the expected group differences- men only rated the woman in the sexualized video condition as sexier relative to the woman in the control condition video. They did not rate the depictions of the woman significantly differently based on condition in regard to the dimensions of human nature, human uniqueness, morality, warmth, competence, or objectification. In light of the need for increasing the sample (due to a high exclusion rate), it seemed likely that many participants may not have attended to the stimuli, even among those who were retained. Additionally, as we believed that a strong manipulation of this kind should be effective, the mix of non-significant and inconclusive results found in this phase indicated that our videos could benefit from some alterations. Thus, we planned and executed a second phase of piloting.

Video Validation Pilot 2

This second study in the series of three video validation pilots aimed to improve the previous video stimuli by refining the delivery of the performance and combining additional elements of manipulations used successfully in past research. This version was also conducted online.

Methods

Participants. We again sought to recruit adult heterosexual male participants who identified as British nations. A total of 80 participants initially completed the study online. Of these, 31 were excluded: one for indicating they were female, one for not identifying as heterosexual, and twenty-nine for either failing to watch the video or failing to watch with the sound on, leaving 49 men. Fourteen of these had their data excluded on the OQ due to failure to follow instructions. Thus, additional sampling was conducted prior to analyses in order to increase power. Fifty participants completed the second phase of sampling, however, twenty-three of these were excluded for failing to watch the video. This left an additional 28 men, and a final combined sample of 77 men. The observed power in this study for an average effect size of $d = 0.5$ was again 0.87.

Procedure. The following was reviewed and approved by the ethics committee of the University of Edinburgh (<https://osf.io/j6cy2/>). Participants completed the study online and were paid £0.50 for their time. Following informed consent, they were asked to confirm their gender and sexual orientation. They then watched one of two videos depicting “Ellie James,”

representing either a sexualized condition ($n = 40$) or non-sexualized condition ($n = 37$), and whether they watched the video and watched the video with sound on. Next, they responded to a series of questionnaires assessing their perceptions of the woman in the video. These included an item assessing how sexy they found her to be; scales of human nature and human uniqueness (Bastian, et al., 2012); measures of her perceived warmth, competence, and morality (Leach, et al., 2007), and the Other Objectification Questionnaire (Strelan & Hargreaves, 2005). Participants were then debriefed, and the study concluded.

Materials and Measures. All materials and measures for the present study can be found compiled in Appendix I, as well as online, <https://osf.io/w3jmv/> .

Video Stimuli. Two new videos depicting “Ellie James” again both showed the same woman delivering a script while facing a camera. This script was changed from the first phase of piloting slightly to state “Hi, my name is Ellie, and I am from Atlanta, Georgia. I am at Edinburgh for study abroad, and I really like it so far. I study English literature and am in my third year now. I’ve probably had a bit too much fun trying different pubs since I got here, but I really love to travel and meet new people. I also love my family, the outdoors, and going to music festivals.” The videos differed systematically from the versions tested in Video Validation Pilot 1 in several ways. These included refinement of the performance to increase realism and believability: correcting the pronunciation of the word “Edinburgh,” adding

more pauses and “ums,” in order to sound less rehearsed, and slowing the exit to be less abrupt. Additionally, the non-sexualized video now was designed to de-emphasize to a greater degree elements that could be construed as sexualized. Specifically, it featured Ellie wearing a black t-shirt with her hair up and glasses on. The two videos were also framed such that the non-sexualized video now showed a closer shot of the woman’s face, while the sexualized video showed a wider shot that included the woman’s body from the hips up, in accordance with the idea of face-ism, which has been employed in designing successful previous manipulations (e.g. Loughnan et al., 2010b; Vaes, et al., 2011). Both the sexualized video (<https://osf.io/xbm6j/>) and the non-sexualized video (<https://osf.io/79wa5/>) can be accessed online.

Perceived Sexiness of Target Woman. A single item was again used to assess perceived sexiness Ellie James, which was “How sexy do you consider the woman in the video to be?”

Human Nature and Human Uniqueness. The same scales used in Video Validation Pilot 1 to assess human nature ($\alpha = .60$), and human uniqueness ($\alpha = .64$; Bastian et al., 2012) were again used here.

Morality, Warmth, and Competence Scales. The same measures used in Video Validation Pilot 1 were used here for warmth ($\alpha = .81$), morality ($\alpha = .67$), and competence ($\alpha = .69$; Leach et al., 2007).

Objectification. The OOO (Strelan & Hargreaves, 2005) was again used to measure objectification of the woman in the video and transformed such that 25 was added to all scores to create positive values.

Results

All data for this study are open access, <https://osf.io/6b2ch/>. Initial tests revealed no differences in responding based on sample group ($ps > .18$), and these groups were thus combined for analyses. We next examined differences between video conditions on sexiness, human nature, human uniqueness, morality, warmth, competence, and objectification. All reported Bayes analyses were calculated using the range-of scale heuristic in determining the predicted theory. Bayes factor interpretations are based on benchmarks provided by Lee and Wagenmakers (2013). No differences emerged based on video condition, with the exception of perceived competence, where participants who viewed the sexualized video rated Ellie as less competent ($M = 5.20$, $S.E. = .15$) than participants who viewed the non-sexualized video ($M = 5.67$, $S.E. = .14$), $t(75) = 2.23$, $p = .03$, Cohen's $d = 0.51$, $r = 0.25$; the Bayes factor indicates that the data provided inconclusive support for this difference, $B_{H(0, 3)} = 1.64$, $RR [1.5, 5]$.

For sexiness, there was inconclusive evidence for the null: Participants who viewed the sexualized video rating Ellie as no sexier ($M = 3.73$, $S.E. = 0.16$) than did participants who viewed the non-sexualized video ($M = 3.35$, $S.E. = 0.16$), $t(75) = 1.65$, $p = .104$, Cohen's $d = 0.38$, $r = 0.19$, $B_{H(0, 2)} = 0.83$, $RR [1.5, 5.25]$. There were non-significant differences in

attribution of human nature between participants who viewed the sexualized video ($M = 5.77$, $S.E. = 0.14$) and those who viewed the non-sexualized video ($M = 5.82$, $S.E. = 0.12$), $t(75) = -0.28$, $p = .780$, Cohen's $d = 0.06$, $r = 0.03$; the Bayes factor indicated inconclusive evidence for the null, $B_{H(0, 3)} = 0.52$, $RR [0.01, 5.25]$. For attribution human uniqueness, participants who viewed the sexualized video ($M = 5.36$, $S.E. = 0.17$) did not differ from those who viewed the non-sexualized video ($M = 5.73$, $S.E. = 0.11$), $t(75) = -1.79$, $p = .077$, Cohen's $d = 0.41$, $r = 0.20$; the Bayes factor provided inconclusive evidence for the null, $B_{H(0, 3)} = 0.65$, $RR [1.75, 6]$. There were non-significant differences in attribution of morality between participants who viewed the sexualized video ($M = 5.38$, $S.E. = 0.16$) and those who viewed the non-sexualized video ($M = 5.73$, $S.E. = 0.13$), $t(75) = -1.68$, $p = .097$, Cohen's $d = 0.37$, $r = 0.19$; the Bayes factor indicated inconclusive evidence for the null, $B_{H(0, 3)} = 0.54$, $RR [1.5, 5]$. There were also non-significant results concerning warmth between participants who viewed the sexualized video ($M = 5.87$, $S.E. = 0.14$) and those who viewed the non-sexualized video ($M = 5.79$, $S.E. = 0.21$), $t(75) = 0.29$, $p = .773$, Cohen's $d = 0.07$, $r = 0.04$; the Bayes factor provided moderate evidence for the null, $B_{H(0, 3)} = 0.12$, $RR [1, 3.5]$. Lastly, for the OOQ, participants who viewed the sexualized video engaging in no more objectification of Ellie ($M = 19.43$, $S.E. = 1.96$) than participants who watched the non-sexualized video ($M = 22.69$, $S.E. = 2.82$), $t(59) = -0.98$, $p = .332$, Cohen's $d = 0.25$, $r = 0.12$; the Bayes factor represented inconclusive evidence for the null, $B_{H(0, 25)} = 0.35$, $RR [7, 27]$.

Discussion

This second phase of piloting again failed to elicit the expected group differences. In this case, men only rated the woman in the sexualized video condition as less competent relative to the woman in the control condition video. They did not rate the depictions of the woman significantly differently based on condition in regard to the dimensions of sexiness, human nature, human uniqueness, morality, warmth, or objectification. While we believed that the changes made to the videos themselves should be effective, we considered it possible that our null results were an artifact of the online delivery format, which differs from how the videos were planned to be ultimately used and could be causing the need for a high participant exclusion rate and general lack of attention to the task. Thus, a third phase of piloting was planned to take place in the lab setting.

Video Validation Pilot 3

This final study in the series of video validation pilots employed the exact same methodology (and videos) as the second phase, with the exception that it was conducted in the lab.

Methods

Participants. We again sought to recruit adult heterosexual men who identify as British nationals. A total of 60 participants initially completed the study in the lab setting. Of these, 5 were excluded: four for not indicating that they identify as heterosexual (2 chose not to respond, 1 identified as bisexual, and 1 identified as ‘other’), and one for failing to watch the video, leaving a final sample of 55 men. The observed power in this study for an average effect size of $d = 0.5$ was 0.74.

Procedure. The following was reviewed and approved by the ethics committee of the University of Edinburgh (<https://osf.io/j6cy2/>). Participants completed the study online on computers based in the lab setting and were paid £3 for their time. Following informed consent, they were asked to confirm their gender and sexual orientation. They then watched one of two videos depicting “Ellie James,” representing either a sexualized condition ($n = 27$) or a non-sexualized condition ($n = 28$). They were then asked to confirm whether they watched the video and watched the video with sound on. Next, they responded to a series of questionnaires assessing their perceptions of the woman in the video. These included an item assessing how sexy they found her to be; scales of human nature and human

uniqueness (Bastian, et al., 2012); measures of her perceived warmth, competence, and morality (Leach, et al., 2007), and the Other Objectification Questionnaire (Strelan & Hargreaves, 2005). Participants were then debriefed, and the study concluded.

Materials and Measures. All materials and measures can be found compiled in Appendix I, as well as online, <https://osf.io/w3jmv/>.

Video Stimuli. The same two videos from video validation pilot 2 were employed here for both the sexualized condition (<https://osf.io/xbm6j/>) and non-sexualized condition (<https://osf.io/79wa5/>).

Perceived Sexiness of Target Woman. A single item was again used to assess perceived sexiness Ellie James, which was “How sexy do you consider the woman in the video to be?” (1-*Not at all sexy*; 5-*Very sexy*).

Human Nature and Human Uniqueness. The same scales used in the video validation pilots 1 and 2 to assess human nature ($\alpha = .75$), and human uniqueness ($\alpha = .52$; Bastian et al., 2012) were again used here.

Morality, Warmth, and Competence Scales. The same measures used in video validation pilots 1 and 2 were used here for warmth ($\alpha = .79$), morality ($\alpha = .56$), and competence ($\alpha = .78$; Leach et al., 2007).

Other Objectification Questionnaire. The OQ (Strelan & Hargreaves, 2005) was again used to measure objectification of the woman depicted in the video and was transformed for ease of interpretation such that 25 was added to all scores to create positive values.

Results

All data for the present study are open access, <https://osf.io/xsbdtd/>. We examined group differences between the videos on perceived sexiness, human nature, human uniqueness, morality, warmth, competence, and objectification. For each test, we also report both the Bayes factor and a meta-Bayes factor that combines the effects of video validation pilots 2 & 3. All Bayes analyses used the range-of-scale heuristic in determining the predicted theory. Interpretations are based on Lee and Wagenmakers' benchmarks (2013).

No differences emerged based on video condition, with the exception of perceived sexiness, where participants who viewed the sexualized video rated Ellie as sexier ($M = 3.56$, $S.E. = .20$) than participants who viewed the non-sexualized video ($M = 2.50$, $S.E. = .19$), $t(53) = 3.82$, $p < .001$, Cohen's $d = 1.03$, $r = 0.46$, $B_{H(0, 2)} = 352.42$. Both the Bayes factor for this study alone, and the combined meta-Bayes factor ($B_{H(0, 2)} = 145.94$) indicated extremely strong evidence for differences. There were non-significant differences in attribution of human nature between participants who viewed the sexualized video ($M = 5.56$, $S.E. = 0.20$) and those who viewed the non-sexualized video ($M = 5.54$, $S.E. = 0.16$), $t(53) = 0.12$, $p = .909$, Cohen's $d = 0.03$, $r = 0.02$; the Bayes factor indicated strong evidence for the null, $B_{H(0, 3)} = 0.06$, $RR [1.75, 6.25]$. The combined meta-Bayes factor also represented strong evidence for the null, $B_{H(0, 3)} = 0.05$, $RR [1.5, 5]$. For attribution human uniqueness, participants who viewed the sexualized video ($M = 5.42$, $S.E. = 0.16$) did not differ from those who viewed the non-sexualized video ($M = 5.18$, $S.E. =$

0.15), $t(53) = 1.06$, $p = .295$, Cohen's $d = 0.29$, $r = 0.14$; the Bayes factor provided moderate evidence for the null, $B_{H(0, 3)} = 0.23$, $RR [2, 6.75]$, while the combined meta-Bayes factor provided inconclusive evidence for the null, $B_{H(0, 3)} = 0.75$, $RR [2.2, 7]$. There were non-significant differences in attribution of morality between participants who viewed the sexualized video ($M = 5.14$, $S.E. = 0.21$) and those who viewed the non-sexualized video ($M = 5.14$, $S.E. = 0.15$), $t(53) = -0.27$, $p = .979$, Cohen's $d = 0.00$, $r = 0.00$; the Bayes factors indicated extremely strong evidence for the null, $B_{H(0, 3)} = 0.01$, $RR [1, 3.25]$, and very strong evidence for the null, combined meta- $B_{H(0, 3)} = 0.02$, $RR [1, 4.25]$. There were also non-significant results concerning warmth between participants who viewed the sexualized video ($M = 5.63$, $S.E. = 0.22$) and those who viewed the non-sexualized video ($M = 5.19$, $S.E. = 0.16$), $t(53) = 1.65$, $p = .105$, Cohen's $d = 0.44$, $r = 0.22$. The Bayes factors provided inconclusive evidence for the null, $B_{H(0, 3)} = 0.65$, $RR [1.75, 6]$, and moderate evidence for the null respectively, combined meta- $B_{H(0, 3)} = 0.30$, $RR [2.5, 9.5]$. For competence, participants who viewed the sexualized video ($M = 4.82$, $S.E. = 0.27$) did not differ in their attributions from those who viewed the non-sexualized video ($M = 4.80$, $S.E. = 0.25$), $t(53) = 0.82$, $p = .935$, Cohen's $d = 0.01$, $r = 0.01$. The Bayes factor indicated very strong evidence for the null, $B_{H(0, 3)} = 0.02$, $RR [1.5, 4.75]$, and the combined meta-Bayes factor indicated strong evidence for the null, $B_{H(0, 3)} = 0.03$, $RR [0.5, 3.25]$. Lastly, for Objectification, participants who viewed the sexualized video engaging in no more objectification of Ellie ($M = 30.30$, $S.E. = 2.48$) than

participants who watched the non-sexualized video ($M = 28.57$, $S.E. = 1.87$), $t(53) = 0.56$, $p = .579$, Cohen's $d = 0.15$, $r = 0.08$; both the Bayes factor and combined meta-Bayes factor represented moderate evidence for the null, $B_{H(0, 25)} = 0.20$, $RR [14, 51]$, combined $B_{H(0, 25)} = 0.27$, $RR [20, 75]$.

Discussion

This final phase of piloting again failed to elicit the expected group differences, and the combined results of studies 2 & 3 (through the use of meta Bayes factors) indicate a consistent pattern of null effects.

General Discussion

Across three studies, we were unable to manipulate men's dehumanization and objectification of a women ("Ellie James") depicted realistically in video form, despite combining multiple manipulations which have been employed successfully in past research. Thus, the planned methodology for the lab study was amended from a between-subjects experimental design to a within-subjects design. It is possible that, while effects of this kind can be captured using simple measures following more artificial stimuli (such as still images accompanied by limited information about the subject, a la Bernard et al., 2015, study 2; Holland & Haslam, 2013; Loughnan et al., 2013; Pacilli et al., 2017; Vasquez et al., 2017), they dissipate in the face of realism and/or depictions that involve the presentation of more nuanced information. The pattern of results found here certainly represent strong initial evidence of this. Alternatively, the measures used as dependent variables could simply not be sensitive enough. These

possibilities, as well as their implications for the field of dehumanization and objectification research, are discussed further in Chapter 7.

Chapter 6- Online Interactions Lab Study

“There is no form of surveillance that is innocent.” - Nakamura (2015)

The present study aimed to add to the existing literature concerning men’s sexual aggression in two primary ways. First, we sought to design, test, and validate the intrusive behavior paradigm as a new methodology for engaging in more naturalistic measurement of sexual aggression. Secondly, following the results of Study 2 (Chapter 2), we aimed to further correlationally examine the role of dehumanization and objectification in men’s sexual aggression in a lab setting, prior to any attempt at an experimental manipulation.

Thus, we employed a within-subjects design which tested the relationship between a set of predictors which included human nature, human uniqueness, morality, warmth, competence, and objectification, and a range of sexual aggression outcome measures which was as representative as possible of the scope of the continuum contained under this construct. These outcomes included both behaviors (the intrusive behavior paradigm, rape behavior analogue, and a chat paradigm) and attitudes (rape proclivity, unfavorable attitudes towards rape victims, and sexual harassment interest). We also included control measures for those most relevant individual difference constructs identified in Study 2 (narcissism, psychopathy, masculinity, hostile sexism), in addition to measures to control for general curiosity and impression management.

Our a priori hypotheses for the present study can be found online (<https://osf.io/nk5wj/>). In service of our first aim, we expected the intrusive behavior paradigm to correlate with other existing measures of sexual aggression, but not with general curiosity or socially desirable responding. In regard to our second aim, we expected that men who engaged in more dehumanization and objectification of the presented woman would also rate higher on our measures of sexual aggression, and that this relationship would hold when controlling for individual differences.

Methods

Participants. Two data collection phases were completed: phase 1 took place in October of 2018, and phase 2 took place across February and March of 2019. For phase 1, an initial sample totaling 52 heterosexual men over the age of 18 with Facebook accounts were recruited through an advertisement on the University of Edinburgh's website, "MyCareerHub." They were paid £2 for completing the initial questionnaire, signing up for a lab time, and showing up to that appointment, and £10 for the lab portion of their participation, totaling £12 paid at the time of completion. Of this sample, two were excluded for identifying as homosexual and asexual respectively, and one was excluded for failing to follow study instructions. This left a total of 49 men for analysis from phase 1. It was determined that the study remained underpowered, and in order to rectify this, phase 2 sought to recruit an additional 25 men using the same criteria. This resulted in a final

combined sample of 74 men and an observed power of 0.74 to detect a medium effect size.

Procedure. The following was reviewed and approved by the ethics committee of the University of Edinburgh (<https://osf.io/pqxf3/>), and the procedural protocol can be found in Appendix J, as well as online (<https://osf.io/2sy6e/>). Participation involved first completing an initial online questionnaire, which was administered prior to coming into the lab, and included measures of narcissism, psychopathy, masculinity, hostile sexism, general curiosity, and impression management. This was followed by a scheduled individual session in-person in the lab setting, which took 45 minutes to an hour. Participants believed that they were involved in a study concerning “Personality, online communications & interactions, and early impression formation.” At the time when they booked a lab appointment, they were also asked to provide their current Facebook profile picture via email to increase the credibility of the cover story.

The same female researcher administered all lab sessions. Upon arrival, participants were told that their study partner was already there and set up; they were walked past at least one closed cubicle door that was marked as “occupied,” to a cubicle containing a computer station where they were to work. Following informed consent and assignment of an anonymous identifier, the researcher gave a brief verbal overview of what participants could expect: a “first impressions” section using the profile photos they and their partner had provided; a “compatibility section,” described as similar to

an online quiz, also containing miscellaneous personal preference questions; and a chat interaction using Facebook messenger, wherein they would be assigned to be either the sender or receiver. They were told they would receive more detailed instructions as they went. Participants were then left alone to complete the first of these sections. After leaving the participant's cubicle, the researcher went into the adjacent cubicle, opening and closing the door audibly, and told the "partner" they could now start. This portion included participants viewing an image of their supposed partner, "Ellie James," and measures of human nature and human uniqueness (Bastian, et al., 2012); warmth, morality, and competence (Leach, et al., 2007); and objectification (Noll & Fredrickson, 1998) all worded to be in relation to their partner.

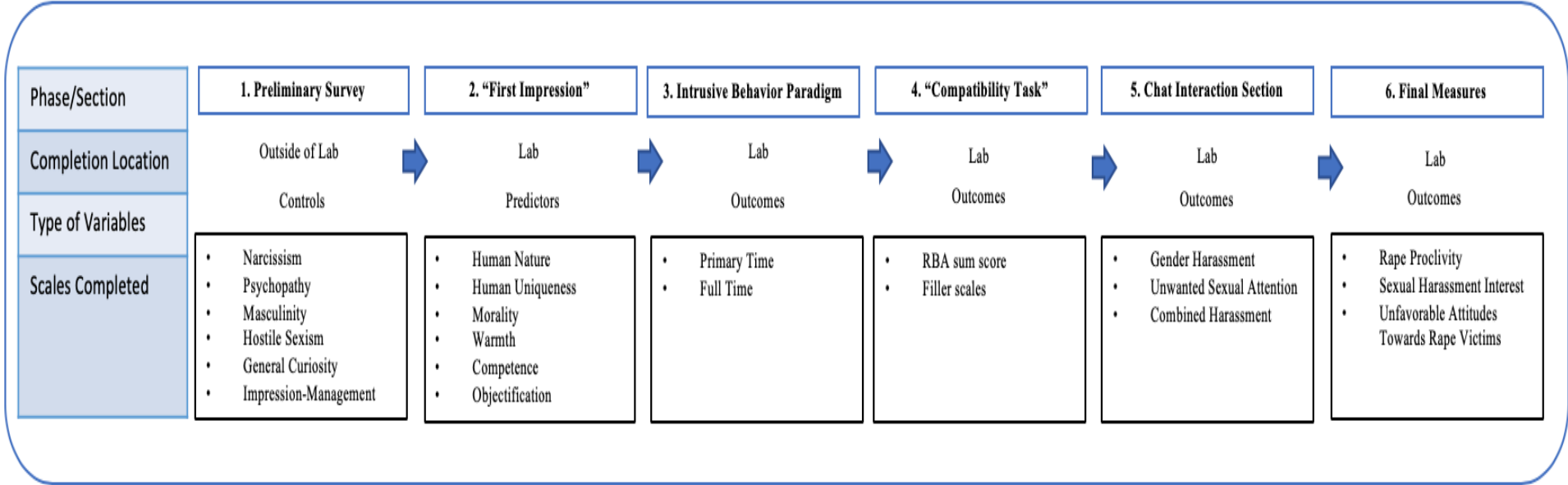
Next, participants were told that for the compatibility section, the researcher needed to stagger who started first and that they would be starting second relative to their partner. Participants were asked to go ahead and become Facebook friends with "Ellie James" at this point, purportedly so that they would be ready for the chat later in the study. Once participants sent a friend request to Ellie James, they were told to wait a couple minutes while the researcher had her accept this request and start the compatibility section. They were then left alone for four minutes, starting from the point when the friend request was accepted, wherein data for the intrusive behavior paradigm was collected. During this time, the researcher again went into the adjacent cubicle, opening and closing the door audibly,

accepting the request, and giving verbal instructions to the “partner.” After the four minutes had elapsed, the researcher returned and started the participant on the “compatibility task.” This section included a modified version of the Rape Behavior Analogue (Rudman & Mescher, 2012), along with several filler scales largely concerning meat consumption personal preferences, which were the same as those used in Facebook pilot 2 (Chapter 4). Next, participants were told that they had been assigned to be the ‘sender’ in the chat. They were given detailed verbal and written instructions on how to complete this section and were left alone to do so. Following the chat, the researcher gave a mini-debrief verbally, informing participants that they did not have a partner in this study, and that the account belonging to “Ellie James” did not belong to a real person. Their attention was also drawn to the use of screen capture having been used , and they were given the option to have this video data deleted should they feel uncomfortable with its use (no participants exercised this option).

Lastly, participants were told that there was a final section which contained items relating to some sensitive topics including sex and sexual aggression, and they were reminded that they had the option to cease participation at this point (none did). Participants then completed the final measures, which included measures of rape proclivity, unfavorable attitudes towards rape victims, and sexual harassment interest- all modified to be in worded relation to Ellie James. They were then given payment and a written

debriefing form, and the study concluded. Figure 3 offers a summary of the flow of this full procedure.

Figure 3.
Summary of Methods



Materials and Measures. All materials and measures for the present study can be found compiled in Appendix K, as well as online (<https://osf.io/kufqr/>).

Preliminary Questionnaire. The preliminary online questionnaire was preceded by informed consent, followed by two items asking participants to confirm their gender and sexual orientation. They were then presented with the following scales in a randomized order. Lastly, they viewed a short debriefing form that included instructions for signing up to the lab portion of the study.

Narcissism & Psychopathy. We employed the Short Dark Triad (SD3; Jones & Paulhus, 2014), which has nine items per scale (1-*Disagree Strongly*; 5 –*Agree Strongly*) to measure narcissism (e.g. “Many group activities tend to be dull without me,” initial sample $\alpha = .70$, supplementary sample $\alpha = .64$, final sample $\alpha = .68$) and psychopathy (e.g. “Payback needs to be quick and nasty,” initial sample $\alpha = .62$, supplementary sample $\alpha = .70$, final sample $\alpha = .65$). Participant mean scores were computed for each scale with higher scores reflecting greater trait narcissism and psychopathy respectively.

Masculinity Scales. The Masculinity Contingency Scale (MCS; Burkley, et al., 2016) measures the extent to which men’s self-worth and identity depend on their personal masculinity. This scale is worded to measure the construct without relying on specific norms, as these are often culturally dependent. We employed the 5-item threat sub-scale of this

measure, which assesses how much the sense of self-worth is threatened by failure to live up to the demands of masculinity (e.g., “My self-worth suffers if I think my manhood is lacking,” (1- *Strongly Disagree*; 5- *Strongly Agree*), and which is more related to negative outcomes for men than the unused sub-scale related to boosting self-worth through masculinity (Burkley, et al., 2016). Scores are computed by averaging across items, with higher scores indicating greater contingency of self-worth based on masculinity, initial sample $\alpha = .90$, supplementary sample $\alpha = .90$, final sample $\alpha = .90$.

The Conformity to Masculine Norms Inventory- 46 (CMNI-46; Parent & Moradi, 2009; Parent & Moradi, 2011) measures conformity to specific masculinity norms. We employed four subscales from the larger scale, totaling 19 items, which were the most theoretically relevant to sexual aggression: risk taking (initial sample $\alpha = .81$, supplementary sample $\alpha = .79$, final sample $\alpha = .80$); violence (initial sample $\alpha = .77$, supplementary sample $\alpha = .82$, final sample $\alpha = .79$); power over women (initial sample $\alpha = .77$, supplementary sample $\alpha = .67$, final sample $\alpha = .74$); and playboy (initial sample $\alpha = .70$, supplementary sample $\alpha = .63$, final sample $\alpha = .67$). All scales were measured from 1 (*Strongly Disagree*) to 4 (*Strongly Agree*), with higher mean scores indicating greater conformity to the given masculine norm.

Hostile Sexism. We employed the hostile sexism (HS) sub-scale from the Ambivalent Sexism Inventory (Glick & Fiske, 1996), which is scaled from 1 (*Disagree Strongly*), to 6 (*Agree Strongly*), initial sample $\alpha = .83$,

supplementary sample $\alpha = .83$, final sample $\alpha = .83$. An example item is

“Women seek to gain power by getting control over men.”

General Curiosity. A single item was used to assess general curiosity: “In general, how curious a person do you consider yourself to be?” (1- *Not at all curious*; 7- *Very curious*).

Social Desirability. This construct was measured using the Brief Social Desirability Scale (Haghighat, 2007). This four-item scale (e.g. “Would you ever lie to people?” reverse scored) is measured from 1 (*Never*) to 5 (*Always*), with higher scores indicating more likelihood of socially desirable responding. Reliability was quite low for this scale, although it improved somewhat when item 4 was dropped, initial sample $\alpha = .51$, supplementary sample $\alpha = .43$, final sample $\alpha = .46$.

First Impressions Section. The general instructions which preceded the scales in this first lab-based section stated “This section of the study is about initial impression formation. Like you, your partner has provided their current Facebook profile photo, and we are asking each of you to rate the other on various attributes based only on the photos you have provided.” Following this, a page presented the image of “Ellie James,” as well as the instructions “Below is the current Facebook profile photo provided by your study partner. Please take a moment to consider any initial impressions you may have of this person.” For each page that followed, the image of Ellie James was again presented at the top of the scale; scales were presented in

a randomized order. The presentation of scales was followed by instructions to let the researcher know when the participant was done with the section.

Human Nature & Human Uniqueness. Four items assessed participant perceptions of Ellie James' human nature (e.g., "(this person) Is emotional, responsive, and warm"; Bastian et al., 2012), initial sample $\alpha = .75$, supplementary sample $\alpha = .40$, final sample $\alpha = .62$. Similarly, there were four human uniqueness items (e.g., "(this person) Is rational, logical, and intelligent"; Bastian, et al., 2012), initial sample $\alpha = .75$, supplementary sample $\alpha = .57$, final sample $\alpha = .70$. Both scales were measured from 1 (*Not at all*), to 7 (*Very much so*) with higher scores indicating greater attribution of the construct to Ellie James.

Warmth, Competence & Morality. Items assessing the Ellie James' warmth, competence, and morality were drawn from Leach et al. (2007). Warmth items asked participants the extent to which the woman was likeable, warm, and friendly (initial sample $\alpha = .78$, supplementary sample $\alpha = .75$, final sample $\alpha = .76$); competence items how intelligent, skilled, and competent she was perceived to be (initial sample $\alpha = .72$, supplementary sample $\alpha = .77$, final sample $\alpha = .74$); and morality items how honest, sincere, and trustworthy (initial sample $\alpha = .80$, supplementary sample $\alpha = .92$, final sample $\alpha = .84$). These nine items were also rated on a scale from 1 (*Not at all*) to 7 (*Very much so*) with higher average scores for each trio indicating greater attributions of morality, warmth, and competence respectively.

Objectification. The Other Objectification Questionnaire (Strelan & Hargreaves, 2005) was used to measure objectification of Ellie James. The scale consists of a total of ten items: five appearance-based (e.g., sex appeal, physical attractiveness, weight, measurements, and toned muscles) and five competence-based (e.g., health, physical fitness level, strength, coordination, and stamina), and participants were asked to rank the relative importance of these attributes, in this case as they relate to Ellie James. Scores were calculated by separately summing the appearance and competence ranks, then subtracting the sum of the competence ranks from the sum of the appearance ranks. This produced a score ranging from -25 to 25, with higher scores reflecting greater objectification. For ease of interpretation 25 was added to all scores to create positive numbers (range 0-50).

Intrusive Behavior Paradigm (IBP). Screen capture software was used throughout the lab portion of the study without explicitly drawing participant attention, unobtrusively creating a video file of all computer screen activity. Using these videos, participants' undirected behavior during the time they were left alone following sending a friend request to Ellie James on Facebook was able to be observed. This behavior was then coded by the primary researcher and a second coder who was blind to study hypotheses. Example behaviors which were coded for include the number of times a participant entered the profile of Ellie James, and the sum of the images they accessed within that account (the full coding scheme can be found in

Appendix L). Two time periods were coded. First, because the length of the time period starting from when participants were left alone to the time the researcher returned varied somewhat by case, coding was limited to the four-minute time period following acceptance of the friend request alone, in order to have a more conservative and standardized time frame for participant scoring ("Primary Time"). Then, additional coding was conducted for the time starting from the point when the friend request was sent by the participant, and inclusive of the four-minute period after this request was accepted ("Full Time"). This was done in order to be more inclusive in the scoring of all possible behaviors that were present while the participant was left alone and added an average of 37.54 seconds to the coding time, ranging from an additional 23 seconds to an additional 1 minute and 16 seconds. The two coders' ratings were highly correlated (Primary Time: initial sample $r = .98$, supplementary sample $r = .95$, final sample $r = .98$; Full Time: initial sample $r = .99$, supplementary sample $r = .98$, final sample $r = .99$) and were thus averaged to create individual participant scores of intrusive behavior. These two participant scores for Primary time and Full time were examined separately; for both, higher scores indicate participants engaged in more intrusive behavior.

Compatibility Task Section. The Rape Behaviour Analogue (RBA), based on the sexual imposition method (cf. Rudman & Mescher, 2012), was used here, along with several filler scales (those used in Facebook Pilot Phase 2) which are not discussed further. We employed the same images in

the RBA as in the original study but modified the paradigm to include a third neutral option in addition to the original image pairs, which represented a forced choice between violent or sexually violent options. This task then involved presenting participants with 17 image groupings, each containing one violent and one sexually violent image (drawn from the original paradigm), as well as the added neutral option. All three images contained people and were thus social in nature. Participants were instructed: “The following is a compatibility task. You and your partner will independently view a series of image sets, each containing three images. You will each be asked to select one of the three images in each set that you would like to share with the other person. We will calculate the number of times the two of you choose the same image in order to assign you a score of general compatibility. This score, along with the images you choose, will be shared with your partner at the end of the study.” Scores were computed by assigning 0 to choices of neutral or violent images, and 1 to sexually violent images, then summing. Because a portion of participants skipped some image sets, these sum scores were converted to percentages based on the individual total number of sets they did respond to.

Chat Paradigm. This section was based on the computer harassment paradigms used by Siebler et al. (2008), and Diehl, et al. (2012; see also, Diehl, Rees, & Bohner, 2018), with some significant alterations made largely to decrease procedural artificiality. Similar to that work, participants were able to send sexist jokes (representing gender harassment) and/or harassing

remarks (representing unwanted sexual attention), and the materials for these were translated from the original studies. Participants were told that they had been randomly assigned to act as the sender and would be choosing from pre-determined comments and jokes to send via Facebook messenger to their study partner, the receiver, who could only respond using the thumbs up or thumbs down. They were given verbal instructions, as well as detailed written instructions (see Appendix K). Participants then completed a total of 14 trials where they sent images whose content consisted of jokes or comments, 10 of which were critical trials.

The choices participants made were used in computing separate percentage scores for the number of sexist jokes and harassing comments sent, as well as a total percentage score for these two combined. In each critical trial there were four choices: a sexist joke and non-sexist joke aimed at women (matched on funniness), and a harassing comment and neutral comment. In the four non-critical trials, two contained choices of a sexist joke aimed at men and a neutral joke, and two contained choices of a neutral comment and neutral joke (see Chapter 4 for details). Across all trials, all choices had been converted into images using white text on a dark grey background contained and organized in a desktop folder, and participants were directed to drag and drop their choice into messenger and await their partner's response before continuing to send additional images. Within the folder, image thumbnails were randomly labelled "Choice 1"- "Choice 4". All sexist jokes and comments received the thumbs-down response, while all

non-sexist/neutral choices received the thumbs-up in response. Higher participants percentage scores on this task indicate more behavioral engagement in gender harassment and/or unwanted sexual attention. Two participants did not follow instructions in this section, and their data is excluded for the chat only.

Final Measures. After choosing to continue following the verbal mini-debrief, participants received these instructions: “In this section you will be asked to respond to a series of questionnaires in relation to the woman in the fake account, Ellie James. Please respond as closely to as you would if this were the real account of a stranger.” They then completed the measures which follow, presented in a randomized order. Two participants did not complete this section and therefore have missing data for these measures only- one ran out of time and had to leave, and for another the survey would not open due to computer malfunction.

Rape Proclivity. The Attraction to Sexual Aggression Inventory (ASAI; Malamuth, 1989) measures attraction to various sexual behaviours, including those involved in conventional, unconventional, and deviant sex. For this study, only those items assessing attitudes related specifically to rape and sexual assault were used, and they were modified to relate to Ellie James. Two items that could not be altered to make sense in this changed context were excluded, resulting in a 12-item scale, initial sample $\alpha = .74$, supplementary sample $\alpha = .93$, final sample $\alpha = .88$. For example, respondents were asked “how arousing would it be to force her [Ellie] to do

something sexual she did not want to do,” (1- *Very Arousing*; 5- *Very Arousing*); higher mean scores on this scale indicate greater rape proclivity.

Unfavorable Attitudes Towards Rape Victims. The Attitudes Towards Rape Victims Scale (ARVS; Ward, 1988) consists of twenty-five items assessing attitudes concerning victims of rape. For example, “the extent of the woman’s resistance should be the major factor in determining if a rape has occurred,” measured from 1 (*Strongly Disagree*), to 5 (*Agree Strongly*). We also modified this scale to relate to Ellie James, and one item could not be altered to make sense in this context, resulting in a 24-item scale. Participant scores were computed by averaging the responses across items, with higher scores indicative of more unfavourable attitudes towards Ellie James as a rape victim, initial sample $\alpha = .83$, supplementary sample $\alpha = .74$, final sample $\alpha = .81$.

Sexual Harassment Interest. The Likelihood to Sexually Harass Scale (LSH; Pryor, 1987) consists of nine scenarios involving a man and a woman, in which male participants are asked to imagine themselves as the male character. In each scenario, the male character is in a position of power and three possible actions are listed. Participants are asked to rate the likelihood of their engaging in the behaviours listed, assuming there would be no consequences for their actions (1- *Not at all likely*; 5- *Very likely*). Only one course of action for each scenario involves sexual harassment, and it is the responses to these items that are averaged across scenarios to form the participants’ scale score, initial sample $\alpha = .89$, supplementary sample $\alpha = .87$,

final sample $\alpha = .88$. All scenarios were re-worded to relate to Ellie James, and higher scores indicate greater sexual harassment interest.

Results

All data for this study which could be fully anonymized is open access (<https://osf.io/f58sz/>). This excludes the original video data files collected for the purposes of the intrusive behavior paradigm, as by their nature they contain too much identifying information to be fully anonymized, but does include the coding data that resulted from these files. This study has a large number of variables, which can be broken down as follows. Predictors include the measures of human nature, human uniqueness, morality, warmth, competence, and objectification. Outcome and validation related measures include three behavioral measures: the intrusive behavior paradigm, modified- rape behavior analogue, and the chat paradigm (including chat jokes assessing gender harassment and chat comments assessing unwanted sexual attention), and three attitude measures: the modified- attraction to sexual aggression inventory (rape proclivity), modified- attitudes towards rape victims scale (unfavorable attitudes towards rape victims), and modified- likelihood to sexually harass scale (sexual harassment interest). Controls include the measures of narcissism, psychopathy, masculinity, hostile sexism, general curiosity, and social desirability.

Initial tests were run to check for any differences between the two samples. Interpretations of Bayes factors are based on the grades of

evidence outlined in Lee and Wagenmakers (2013). These initial tests employed the range-of-scale heuristic for determining the predicted theory when calculating the Bayes factors, with the exception of the tests conducted on the intrusive behavior paradigm- because this paradigm has no upper scale limit, the room-to-move heuristic was employed. For the predictor variables, these tests revealed no systematic differences based on sample ($ps > .098$). Bayes analyses ranged from 0.13, representing moderate evidence for the null, to 0.78, representing inconclusive evidence for the null. For the outcome variables, there was moderate evidence that participants from the initial sample were lower in rape proclivity ($M = 1.30$, $S.E. = 0.05$) than participants in the supplementary sample ($M = 1.61$, $S.E. = 0.14$), $t(69) = -2.55$, $p = .013$, Cohen's $d = 0.58$, $r = 0.28$, $B_{H(0, 2)} = 3.08$, $RR[0.5, 2.10]$; no other significant differences were evident. Bayes analyses ranged from 0.09 (representing strong evidence for the null) to 1.90 (representing inconclusive evidence for the alternative). There were only non-significant differences based on sample for the control variables ($ps > .173$). Bayes analyses ranged from 0.09, representing strong evidence for the null, to 0.50, representing inconclusive evidence for the null. Thus, the two sample were justifiably combined for all further analyses.

Next, descriptive statistics (Table 19) and correlations for all variables (Table 20- 22) were examined. These correlations indicated a limited number of relationships between predictor and outcome variables, which were used to determine initial hierarchical linear regression models of interest. Then,

further exploratory linear regression models were run for all predictor and outcome variables (regardless of whether a correlation was predetermined) in order to apply Bayesian analyses²⁰. These results can be found in Tables 23- 31, with interpretations in the body of the text. All regression models used the ratio-of-scale heuristic (Dienes, preprint, <https://psyarxiv.com/yqaj4/>) for determining the predicted theory in Bayes factor calculations, with the exception of those calculated for the intrusive behavior paradigm, a measure which has no set upper limit, and thus employed the ratio-of-means heuristic.

²⁰ Additional analyses were run for the behavioral outcome measures (Intrusive behavior, RBA, & Chat) using a limited sample of those men who engaged in any behavior (excluding those who did nothing), as well as logistic regression models using the full sample and treating these behavioral outcomes as categorical. Additionally, the analyses which combined the possible harassing behaviors in the chat (summing both jokes and comments and referred to as Chat Overall) were run. These results can be found in Appendix M.

Table 19.
Descriptive Statistics for All Variables

| <i>Variable</i> | <i>N</i> | <i>Mean (Scale Range)</i> | <i>SD</i> | <i>Variance</i> | <i>Skewness</i> |
|-----------------------------------|----------|---------------------------|-----------|-----------------|-----------------|
| <u>Predictors</u> | | | | | |
| Human Nature | 74 | 5.24(1-7) | 1.01 | 1.03 | -.55 |
| Human Uniqueness | 74 | 4.97(1-7) | 1.17 | 1.37 | -1.01 |
| Morality | 74 | 4.73(1-7) | 1.19 | 1.43 | -.36 |
| Warmth | 74 | 5.54(1-7) | 1.03 | 1.06 | -.73 |
| Competence | 74 | 4.58(1-7) | 1.14 | 1.31 | -.49 |
| Objectification | 71 | 23.55(0-50) | 12.11 | 146.54 | .30 |
| <u>Outcomes</u> | | | | | |
| Intrusive Behavior (Primary Time) | 74 | 3.89(0-56) | 8.38 | 70.27 | 3.96 |
| Intrusive Behavior (Full Time) | 74 | 4.74(0-59) | 10.38 | 107.66 | 3.59 |
| m-RBA | 74 | 15.15(0-100) | 15.36 | 235.86 | 1.24 |
| Chat Jokes | 72 | 9.03(0-100) | 11.65 | 135.66 | 1.18 |
| Chat Comments | 72 | 6.67(0-100) | 9.49 | 90.14 | 1.74 |
| m-ASAI | 71 | 1.41(1-5) | 0.50 | 0.25 | 2.08 |
| m-ARVS | 72 | 1.74(1-5) | 0.46 | 0.21 | 0.49 |
| m-LSH | 72 | 1.34(1-5) | 0.54 | 0.30 | 1.73 |
| <u>Controls</u> | | | | | |
| Narcissism | 74 | 3.02(1-5) | 0.57 | 0.33 | 0.45 |
| Psychopathy | 74 | 2.29(1-5) | 0.55 | 0.30 | -0.14 |
| Masculine Contingency Scale | 74 | 2.16(1-5) | 0.92 | 0.85 | 0.90 |
| Masculine Norm: Risk Taking | 74 | 2.44(1-4) | 0.59 | 0.34 | -0.06 |
| Masculine Norm: Violence | 74 | 2.27(1-4) | 0.66 | 0.44 | 0.11 |
| Masculine Norm: Power Over Women | 74 | 1.61(1-4) | 0.61 | 0.38 | 1.14 |
| Masculine Norm: Playboy | 74 | 2.13(1-4) | 0.70 | 0.49 | -0.26 |
| Hostile Sexism | 74 | 2.90(1-6) | 0.99 | 0.98 | -0.27 |
| General Curiosity | 74 | 5.86(1-7) | 1.20 | 1.43 | -0.57 |
| Social Desirability | 74 | 3.73(1-5) | 0.66 | 0.44 | -0.69 |

Note. M-RBA = modified Rape Behavior Analogue; m-ASAI = modified Attraction to Sexual Aggression Inventory; m-ARVS = modified Attitudes Towards Rape Victims Scale; m-LSH = modified Likelihood to Sexually Harass.

Table 20.
Correlations Among Main Variables (Part 1)

| | <i>Intrusive (Primary)</i> | <i>Intrusive (Full)</i> | <i>m-RBA</i> | <i>Chat Jokes</i> | <i>Chat Comments</i> | <i>m-ASAI</i> | <i>m-ARVS</i> | <i>m-LSH</i> |
|---------------------|----------------------------|-------------------------|--------------|-------------------|----------------------|---------------|---------------|--------------|
| <u>Outcomes</u> | | | | | | | | |
| Intrusive (Primary) | 1 | | | | | | | |
| Intrusive (Full) | .958** | 1 | | | | | | |
| m-RBA | .397** | .412** | 1 | | | | | |
| Chat Jokes | -.009 | .006 | .138 | 1 | | | | |
| Chat Comments | .062 | .068 | .279* | .136 | 1 | | | |
| m-ASAI | .011 | .014 | .097 | .154 | .167 | 1 | | |
| m-ARVS | .163 | .156 | .034 | .371** | .176 | .460** | 1 | |
| m-LSH | .356** | .384** | .285* | .172 | .114 | .371** | .342** | 1 |
| <u>Predictors</u> | | | | | | | | |
| Human Nature | -.017 | -.050 | -.152 | .040 | -.062 | -.065 | -.190 | .028 |
| Human Uniqueness | -.048 | -.074 | .057 | -.108 | -.094 | .007 | -.268* | .123 |
| Morality | -.199 | -.182 | -.087 | -.100 | -.066 | -.043 | -.121 | -.112 |
| Warmth | -.024 | -.089 | -.340** | -.083 | -.091 | -.239* | -.268* | -.099 |
| Competence | -.257* | -.336** | -.135 | -.132 | -.062 | -.041 | -.168 | -.089 |
| Objectification | .041 | .023 | -.128 | .022 | -.184 | -.024 | -.070 | .099 |

Table 20.

Correlations Among Main Variables (Part 2)

| | <i>Intrusive (Primary)</i> | <i>Intrusive (Full)</i> | <i>m-RBA</i> | <i>Chat Jokes</i> | <i>Chat Comments</i> | <i>m-ASAI</i> | <i>m-ARVS</i> | <i>m-LSH</i> |
|--------------------------|----------------------------|-------------------------|--------------|-------------------|----------------------|---------------|---------------|--------------|
| Controls | | | | | | | | |
| Narcissism | .136 | .174 | .175 | .224 | .244* | .076 | .271* | .256* |
| Psychopathy | .167 | .183 | .339** | .132 | .057 | .295* | .214 | .270* |
| Masculine Contingency | .118 | .131 | .151 | .036 | .186 | .408** | .432** | .423** |
| Masculine Norm: Risk | .076 | .088 | .047 | -.090 | -.030 | -.006 | .094 | .040 |
| Masculine Norm: Violence | -.103 | -.094 | -.013 | -.109 | -.128 | .065 | .059 | .112 |
| Masculine Norm: Power | .026 | .002 | .027 | .124 | .066 | .369** | .420** | .445** |
| Masculine Norm: Playboy | -.009 | -.018 | .133 | -.033 | .291* | .034 | -.027 | .261* |
| Hostile Sexism | .208 | .224 | .196 | .321** | .030 | .381** | .577** | .466** |
| General Curiosity | .166 | .204 | .175 | -.180 | .079 | -.169 | -.075 | -.024 |
| Social Desirability | -.215 | -.238* | -.085 | -.001 | .108 | -.098 | -.264* | -.126 |

Note: * $p < 0.05$, two-tailed. ** $p < 0.01$, two tailed.

m-RBA = modified Rape Behavior Analogue; m-ASAI = modified Attraction to Sexual Aggression Inventory; m-ARVS = modified Attitudes Towards Rape Victims Scale; m-LSH = modified Likelihood to Sexually Harass.

Table 21.

Correlations Among Predictors and Control Variables

| | <i>Human Nature</i> | <i>Human Uniqueness</i> | <i>Morality</i> | <i>Warmth</i> | <i>Competence</i> | <i>Objectification</i> |
|--------------------------|---------------------|-------------------------|-----------------|---------------|-------------------|------------------------|
| <u>Predictors</u> | | | | | | |
| Human Nature | 1 | | | | | |
| Human Uniqueness | .587** | 1 | | | | |
| Morality | .547** | .438** | 1 | | | |
| Warmth | .729** | .395** | .459** | 1 | | |
| Competence | .427** | .411** | .477** | .485** | 1 | |
| Objectification | .141 | .228 | .208 | .107 | .152 | 1 |
| <u>Controls</u> | | | | | | |
| Narcissism | -.040 | -.024 | -.104 | .024 | -.170 | -.210 |
| Psychopathy | .014 | .097 | -.082 | -.215 | -.068 | -.125 |
| Masculine Contingency | -.071 | .019 | -.149 | -.155 | .001 | -.162 |
| Masculine Norm: Risk | .052 | -.007 | -.104 | .037 | -.025 | -.223 |
| Masculine Norm: Violence | .098 | .124 | .011 | .005 | .088 | -.014 |
| Masculine Norm: Power | .063 | .126 | .007 | -.073 | .039 | -.009 |
| Masculine Norm: Playboy | .168 | .093 | .058 | .064 | .021 | -.279* |
| Hostile Sexism | -.089 | -.185 | -.205 | -.277* | -.156 | .181 |
| General Curiosity | .207 | .127 | .150 | .216 | .007 | -.210 |
| Social Desirability | .202 | .082 | .069 | .213 | .249* | -.206 |

Note. * $p < 0.05$, two-tailed. ** $p < 0.01$, two tailed.

Table 22.
Correlations Among Control Variables

| | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. |
|--------------------------------|--------|--------|--------|--------|--------|--------|-------|-------|------|-----|
| 1. Narcissism | 1 | | | | | | | | | |
| 2. Psychopathy | .282* | 1 | | | | | | | | |
| 3. Masculine Contingency | .404** | .357** | 1 | | | | | | | |
| 4. Masculine Norm: Risk Taking | .392** | .470** | .085 | 1 | | | | | | |
| 5. Masculine Norm: Violence | -.037 | .363** | .189 | .324** | 1 | | | | | |
| 6. Masculine Norm: Power | .275* | .304** | .607** | .139 | .303** | 1 | | | | |
| 7. Masculine Norm: Playboy | .090 | .315** | .133 | .265* | .265* | .278* | 1 | | | |
| 8. Hostile Sexism | .258* | .410** | .520** | .189 | .179 | .518** | .092 | 1 | | |
| 9. General Curiosity | .142 | .193 | -.069 | .346** | .067 | -.115 | .271* | -.061 | 1 | |
| 10. Social Desirability | .180 | .021 | -.051 | .071 | -.041 | -.058 | .093 | -.165 | .029 | 1 |

Note. * $p < 0.05$, two-tailed. ** $p < 0.01$, two tailed.

Behavioral Outcomes.

Intrusive Behavior Paradigm. The frequency distribution of this newly developed measure indicated that a large portion of men did not access the account at all (Primary Time: 55.41 percent, $n = 41$; Full Time: 50.00 percent, $n = 37$). A second group had scores ranging from one to ten (Primary Time: 31.08 percent, $n = 23$; Full Time: 35.14 percent, $n = 26$), and a third group had scores between ten and forty (Primary Time: 12.16 percent, $n = 9$; Full Time: 12.16 percent, $n = 9$). Finally, a small portion of men produced scores higher than 40 (Primary Time: 1.35 percent, $n = 1$; Full Time: 2.70 percent, $n = 2$). See Figure 4 for a visualization of these distributions.

Primary Time. In addition to the other outcome measures that this measure correlated with (RBA, LSH, Intrusive behavior paradigm full time), correlated predictors included only competence, and there were no correlated controls. When intrusive behavior was regressed on competence, the model was significant ($b = -1.88$, 95% CI [4.64, 20.33], $S.E. = 0.83$, $\beta = -0.26$, $p = .027$, Adj. $R^2 = .05$)²¹, although the Bayes factor represented inconclusive evidence for the null, $B_{H(0, 0.59)} = 0.94$, $RR[5^{-7}, 8.25]$. Next, we ran exploratory regression models²². As shown in Table 23, the evidence in each of these was inconclusive in favor of the null, with the exception of objectification, which provided strong evidence for the null.

²¹ Post-hoc achieved power 0.50

²² Post-hoc achieved power range 0.13- 0.32

Figure 4.
Intrusive Behavior Paradigm Frequency Distribution

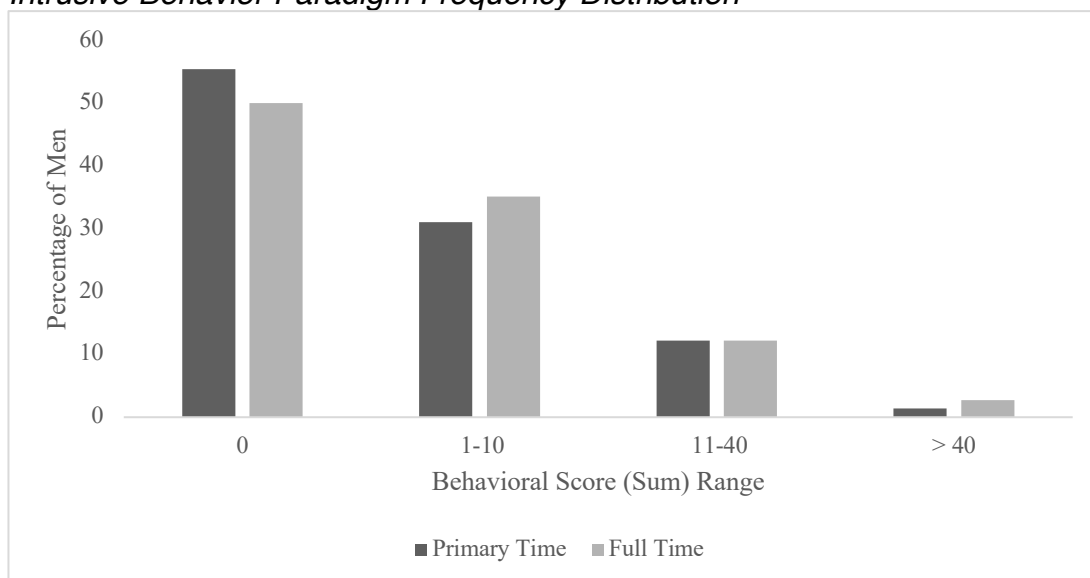


Table 23.

Exploratory Linear Regression Models, Intrusive Behavior (Primary Time)

| Predictor Variable Tested | Model 1 | | | Model 2 | | | Model 3 | | |
|--|---------|----------------------------|------|---------|----------------------------|--------|---------|----------------------------|-------|
| | β | b | t | β | b | t | β | b | t |
| 1. Human Nature | -.02 | -.14 | -.14 | | | | | | |
| 2. Human Uniqueness | | | | -.05 | -.34 | -.40 | | | |
| 3. Morality | | | | | | | -.20 | - | -1.72 |
| | | | | | | | | 1.40 | |
| F | | .02 | | | .16 | | | 2.96 | |
| $df(df_{error})$ | | 1(72) | | | 1(72) | | | 1(72) | |
| <i>Adjusted R</i> ² | | -.01 | | | -.01 | | | .03 | |
| 95% CI b (lower, upper) | | -2.09, 1.80 | | | -2.02, 1.34 | | | -3.01, 0.22 | |
| <i>Bayes Factor</i> _{H(0, scale of theory)} | | 0.78 _{H(0, 0.67)} | | | 0.67 _{H(0, 0.64)} | | | 0.42 _{H(0, 0.61)} | |
| BF Robustness Region | | 1 ⁻⁷ , 2.75 | | | 1 ⁻⁷ , 2 | | | 1 ⁻⁸ , 1 | |
| | | | | | | | | | |
| | Model 4 | | | Model 5 | | | Model 6 | | |
| | β | b | t | β | b | t | β | b | t |
| 4. Warmth | -.02 | -.19 | -.20 | | | | | | |
| 5. Competence | | | | -.26 | -1.88 | -2.25* | | | |
| 6. Objectification | | | | | | | .04 | .03 | .34 |
| F | | .04 | | | 5.07 | | | .12 | |
| $df(df_{error})$ | | 1(72) | | | 1(72) | | | 1(69) | |
| <i>Adjusted R</i> ² | | -.01 | | | .05 | | | -.01 | |
| 95% CI B (upper, lower) | | -2.10, 1.72 | | | -3.54, -0.22 | | | -0.12, 0.19 | |
| <i>Bayes Factor</i> _{H(0, scale of theory)} | | 0.74 _{H(0, 0.71)} | | | 0.38 _{H(0, 0.59)} | | | 0.04 _{H(0, 3.03)} | |
| BF Robustness Region | | 1 ⁻⁷ , 2.5 | | | 1 ⁻⁸ , 0.75 | | | 1, 4 | |

Note: * $p < .05$.

Full Time. Similar to the primary coding time for this measure, the full time was correlated with outcomes that included the RBA, LSH, and the intrusive behavior primary time. Competence was the only correlated predictor, and social desirability the only correlated control variable. Thus, a hierarchical regression was run in which competence was entered in Step 1 ($b = -3.04$, 95% CI [-5.05, -1.04], $S.E. = 1.01$, $\beta = -.34$, $p = .003$, Adj. $R^2 = .10$); the Bayes factor represented inconclusive evidence for the null, $B_{H(0, 0.48)} = 0.41$, $RR[1^{-8}, 8.25]$. Social desirability was added in Step 2 ($b = -2.57$, 95% CI [-6.13, 0.98], $S.E. = 1.78$, $\beta = -.16$, $p = .153$, Adj. $R^2 = .11$, $B_{H(0, 0.39)} = 0.78$, $RR[1^{-8}, 2.25]$)²³. While competence remained significant ($b = -2.67$, 95% CI [-4.73, -0.62], $S.E. = 1.03$, $\beta = -.30$, $p = .012$) when controlling for social desirability, the Bayes factor still represented inconclusive evidence for the null $B_{H(0, 0.48)} = 0.47$, $RR[1^{-8}, 9.5]$. The exploratory regression models mirrored the results found for the primary time (Table 24): inconclusive evidence for the null was found for all models, with the exception of objectification, which showed strong evidence for the null²⁴. Thus, for the intrusive behavior paradigm, across both the primary coding time and full coding time, results did not indicate evidence for a role of dehumanization or objectification in men's behavior.

²³ Post-hoc achieved power step 1 = 0.81; step 2 = 0.76

²⁴ Post-hoc achieved power range 0.13- 0.26

Table 24.

Exploratory Linear Regression Models, Intrusive Behavior (Full Time)

| Predictor Variable Tested | Model 1 | | | Model 2 | | | Model 3 | | |
|--|---------|----------------------------|------|---------|----------------------------|--------|---------|----------------------------|-------|
| | β | b | t | β | b | t | β | b | t |
| 1. Human Nature | -.05 | -.51 | -.43 | | | | | | |
| 2. Human Uniqueness | | | | -.07 | -.66 | -.63 | | | |
| 3. Morality | | | | | | | -.18 | -1.58 | -1.57 |
| F | | .18 | | | .40 | | | 2.46 | |
| $df(df_{error})$ | | 1(72) | | | 1(72) | | | 1(72) | |
| <i>Adjusted R</i> ² | | -.01 | | | -.01 | | | .02 | |
| 95% CI b (lower, upper) | | -2.92, 1.89 | | | -2.73, 1.42 | | | -3.59, 0.43 | |
| <i>Bayes Factor</i> _{H(0, scale of theory)} | | 0.80 _{H(0, 0.55)} | | | 0.73 _{H(0, 0.52)} | | | 0.56 _{H(0, 0.50)} | |
| BF RR | | 1 ⁻⁷ , 2.75 | | | 1 ⁻⁷ , 2 | | | 1 ⁻⁸ , 1.25 | |
| | | | | | | | | | |
| | Model 4 | | | Model 5 | | | Model 6 | | |
| | β | b | t | β | b | t | β | b | t |
| 4. Warmth | -.09 | -.89 | -.76 | | | | | | |
| 5. Competence | | | | -.34 | -3.04 | -3.03* | | | |
| 6. Objectification | | | | | | | .02 | .02 | .20 |
| F | | .57 | | | 9.15 | | | .04 | |
| $df(df_{error})$ | | 1(72) | | | 1(72) | | | 1(69) | |
| <i>Adjusted R</i> ² | | -.01 | | | .10 | | | -.01 | |
| 95% CI B (upper, lower) | | -3.25, 1.46 | | | -5.05, -1.04 | | | -0.19, 0.23 | |
| <i>Bayes Factor</i> _{H(0, scale of theory)} | | 0.71 _{H(0, 0.58)} | | | 0.41 _{H(0, 0.48)} | | | 0.05 _{H(0, 2.48)} | |
| BF Robustness Region | | 1 ⁻⁷ , 2.25 | | | 1 ⁻⁸ , 0.75 | | | 1, 4.25 | |

Note: * $p < .05$.

Rape Behavior Analogue. The frequency distribution of this measure indicated that a portion of men did not choose any sexually aggressive images (27.03 percent, $n = 20$). A second group, 17.5 percent of men ($n = 13$), chose sexually aggressive images under 10 percent of the time, 31.10 percent of men ($n = 23$) chose sexually aggressive images between 10 and 20 percent of the time, 5.41 percent of men ($n = 4$) chose these images between 20 and 30 percent of the time, 12.16 percent of men ($n = 9$) chose these between 30 and 40 percent of the time, and 6.76 percent of men ($n = 5$) chose sexually aggressive images over 40 percent of the time. Thus, on average, men sent sexually aggressive stimuli 15.15 percent of the time. See Figure 5 for a visualization of this distribution.

The rape behavior analogue was correlated with multiple other outcome measures (both coding times for intrusive behavior, chat comments, chat overall, and likelihood to sexually harass). It was only correlated with warmth among the predictors, and correlated controls included psychopathy and the masculine norm of being a playboy. An initial hierarchical regression was employed in which warmth was entered in Step 1 ($b = -5.07$, 95% CI [-8.36, -1.78], $S.E. = 1.65$, $\beta = -.34$, $p = .003$, Adj. $R^2 = .10$); the Bayes factor represented inconclusive evidence for the null, $B_{H(0, 0.03)} = 0.96$, $RR[1^{-8}, 1.25]$. Psychopathy ($b = 5.99$, 95% CI [-0.41, 12.39], $S.E. = 3.21$, $\beta = .21$, $p = .066$, $B_{H(0, 0.02)} = 1.01$, $RR[<1^{-8}, 34]$) and playboy ($b = 4.08$, 95% CI [-0.85, 9.01], $S.E. = 2.47$, $\beta = .19$, $p = .103$, $B_{H(0, 0.015)} = 1.01$, $RR[<1^{-7}, 18]$) were added in Step 2 (Adj. $R^2 = .19$). Warmth was retained in Step 2 when tested against

these control variables, $b = -4.56$, 95% CI $[-7.80, -1.32]$, $S.E. = 1.63$, $\beta = -.31$, $p = .007$, however, the Bayes factor remained indicative of inconclusive evidence for the null, $B_{H(0, 0.03)} = 0.96$, $RR[1^{-8}, 12.5]^{25}$. Exploratory regression models (Table 25)²⁶ revealed moderate evidence for the null in the case of objectification, inconclusive evidence for the null in the cases of human nature, morality, warmth, and competence, and inconclusive evidence for the alternative in the case of human uniqueness. Thus, there is little-no evidence for a role of dehumanization or objectification in predicting men's behavior in this analogue.

²⁵ Post-hoc achieved power step 1 = 0.81; step 2 = 0.94

²⁶ Post-hoc achieved power range 0.13- 0.81

Figure 5.
Rape Behavior Analogue Frequency Distribution

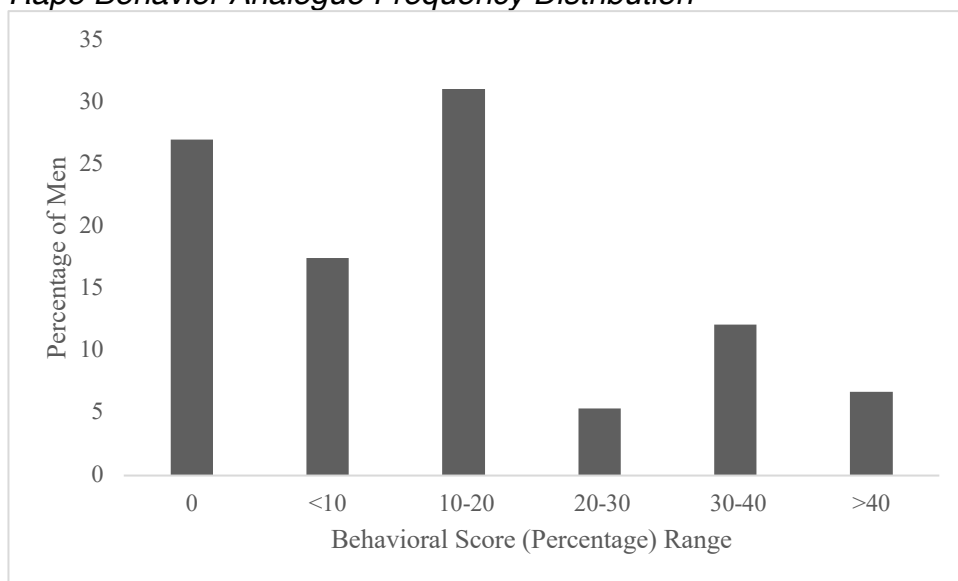


Table 25.

Exploratory Linear Regression Models, Rape Behavior Analogue

| Predictor Variable Tested | Model 1 | | | Model 2 | | | Model 3 | | |
|--|---------|----------------------------|----------|---------|----------------------------|----------|---------|----------------------------|----------|
| | β | <i>b</i> | <i>t</i> | β | <i>b</i> | <i>t</i> | β | <i>b</i> | <i>t</i> |
| 1. Human Nature | -.15 | -2.31 | -1.31 | | | | | | |
| 2. Human Uniqueness | | | | .06 | .75 | .48 | | | |
| 3. Morality | | | | | | | -.09 | -1.12 | -.74 |
| <i>F</i> | | 1.71 | | | .23 | | | .55 | |
| <i>df(df_{error})</i> | | 1(72) | | | 1(72) | | | 1(72) | |
| <i>Adjusted R²</i> | | .01 | | | -.01 | | | -.01 | |
| 95% CI <i>b</i> (lower, upper) | | -5.83, 1.21 | | | -2.33, 3.82 | | | -4.13, 1.90 | |
| <i>Bayes Factor</i> _{H(0, scale of theory)} | | 0.98 _{H(0, 0.03)} | | | 1.01 _{H(0, 0.03)} | | | 0.99 _{H(0, 0.03)} | |
| BF RR | | 1 ⁻⁸ , 2.25 | | | <1 ⁻⁸ , 1.5 | | | 1 ⁻⁷ , 2.75 | |
| | | | | | | | | | |
| | Model 4 | | | Model 5 | | | Model 6 | | |
| | β | <i>b</i> | <i>t</i> | β | <i>b</i> | <i>t</i> | β | <i>b</i> | <i>t</i> |
| 4. Warmth | -.34 | -5.07 | -3.07* | | | | | | |
| 5. Competence | | | | -.14 | -1.81 | -1.16 | | | |
| 6. Objectification | | | | | | | -.13 | -.16 | -1.08 |
| <i>F</i> | | 9.44 | | | 1.33 | | | 1.16 | |
| <i>df(df_{error})</i> | | 1(72) | | | 1(72) | | | 1(69) | |
| <i>Adjusted R²</i> | | .10 | | | .01 | | | .01 | |
| 95% CI <i>B</i> (upper, lower) | | -8.36, -1.78 | | | -4.93, 1.31 | | | -0.47, 0.14 | |
| <i>Bayes Factor</i> _{H(0, scale of theory)} | | 0.96 _{H(0, 0.03)} | | | 0.98 _{H(0, 0.03)} | | | 0.29 _{H(0, 0.25)} | |
| BF Robustness Region | | 1 ⁻⁸ , 1.25 | | | 1 ⁻⁸ , 2.25 | | | 0.15, 1 | |

Note: * $p < .05$.

Chat Paradigm. See Figure 6 for a visualization of the frequency distribution for both gender harassment and unwanted sexual attention.

Gender Harassment. The frequency distribution of harassing jokes sent for the ten critical trials can be broken down as follows: 50 percent of men ($n = 37$) sent no harassing jokes, 23 percent of men ($n = 17$) sent harassing jokes ten percent of the time, 12.2 percent of men ($n = 9$) sent harassing jokes for 20 percent of the critical trials, 8.1 percent of men ($n = 6$) sent them for 30 percent of the critical trials, and 4.1 percent of men ($n = 3$) sent harassing jokes 40 percent of these trials. Thus, on average, men sent harassing jokes in 9.03 percent of critical trials. Among the outcome variables, chat jokes were correlated with the chat overall and unfavorable attitudes towards rape victims (ARVS). Jokes were not correlated with any predictors, and only correlated with hostile sexism among the controls. The exploratory regression analyses (Table 26) showed inconclusive evidence for the null in all cases, with the exception of human nature, which provided inconclusive evidence for the alternative.

Arguably, it is possible that the sending of jokes was not construed as harassment until men received feedback indicating that this constituted unwanted content. Thus, additional analyses were run where only those jokes sent *after* the first one were used. The frequency distribution indicated that 73 percent of men sent no harassing jokes under these conditions ($n = 54$), 12.2 percent on men sent one additional harassing joke after receiving negative feedback ($n = 9$), 8.1 percent sent two additional jokes ($n = 6$), and

4.1 percent ($n = 3$) sent three more harassing jokes following initial feedback. The pattern of correlations remained the same under these conditions: among the outcome variables, jokes were correlated with the chat overall and unfavorable attitudes towards rape victims (ARVS). Jokes were not correlated with any predictors, and only correlated with hostile sexism among the controls. Exploratory regression models with the limited range of joke behavior regressed on each predictor variable were all non-significant ($ps > .58$), with Bayes factors that ranged from 0.37 (representing inconclusive evidence for the null), to 1.03 (representing inconclusive evidence for the alternative)²⁷. Thus, results did not indicate evidence of a role of dehumanization or objectification in men's harassing joke behavior.

²⁷ Post hoc achieved power of 0.13, all models.

Figure 6.
Chat Paradigm Frequency Distributions

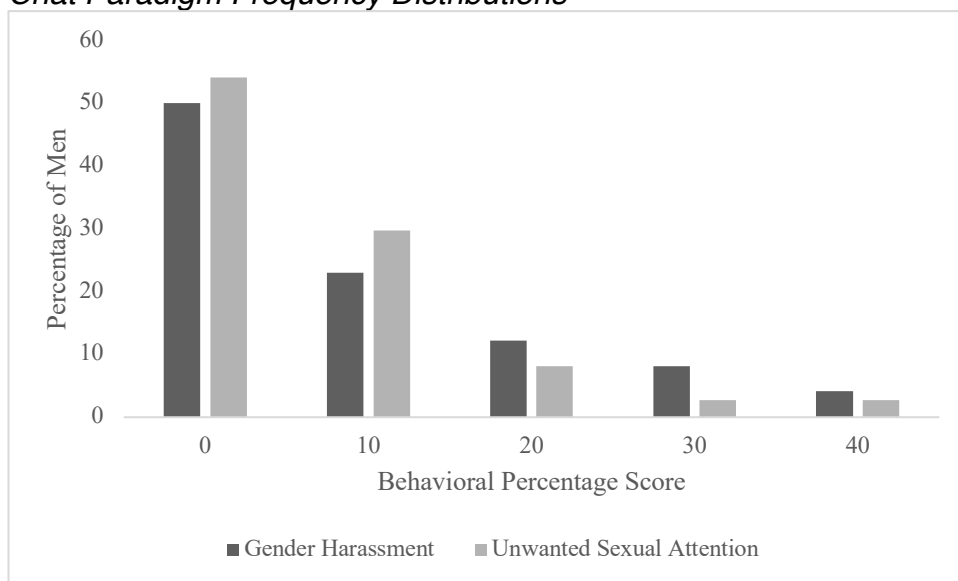


Table 26.

Exploratory Linear Regression Models, Chat- Gender Harassment (Jokes)

| Predictor Variable Tested | Model 1 | | | Model 2 | | | Model 3 | | |
|--|---------|----------------------------|----------|---------|----------------------------|----------|---------|----------------------------|----------|
| | β | <i>b</i> | <i>t</i> | β | <i>b</i> | <i>t</i> | β | <i>b</i> | <i>t</i> |
| 1. Human Nature | .04 | .45 | .33 | | | | | | |
| 2. Human Uniqueness | | | | -.11 | -1.06 | -.91 | | | |
| 3. Morality | | | | | | | -.10 | -.97 | -.84 |
| <i>F</i> | | .11 | | | .82 | | | .71 | |
| <i>df(df_{error})</i> | | 1(70) | | | 1(70) | | | 1(70) | |
| <i>Adjusted R²</i> | | -.01 | | | -.01 | | | -.01 | |
| 95% CI <i>b</i> (lower, upper) | | -2.26, 3.17 | | | -3.39, 1.27 | | | -3.28, 1.33 | |
| <i>Bayes Factor</i> _{H(0, scale of theory)} | | 1.01 _{H(0, 0.03)} | | | 0.98 _{H(0, 0.03)} | | | 0.98 _{H(0, 0.03)} | |
| BF RR | | <1 ⁻⁶ , 0.75 | | | 1 ⁻⁸ , 2 | | | 1 ⁻⁸ , 2 | |
| | | | | | | | | | |
| | Model 4 | | | Model 5 | | | Model 6 | | |
| | β | <i>b</i> | <i>t</i> | β | <i>b</i> | <i>t</i> | β | <i>b</i> | <i>t</i> |
| 4. Warmth | -.08 | -.94 | -.70 | | | | | | |
| 5. Competence | | | | -.13 | -1.34 | -1.11 | | | |
| 6. Objectification | | | | | | | .02 | .02 | .18 |
| <i>F</i> | | .49 | | | 1.24 | | | .03 | |
| <i>df(df_{error})</i> | | 1(70) | | | 1(70) | | | 1(67) | |
| <i>Adjusted R²</i> | | -.01 | | | .01 | | | -.01 | |
| 95% CI <i>B</i> (upper, lower) | | -3.61, 1.74 | | | -3.74, 1.06 | | | -0.22, 0.27 | |
| <i>Bayes Factor</i> _{H(0, scale of theory)} | | 0.99 _{H(0, 0.03)} | | | 0.98 _{H(0, 0.03)} | | | 0.51 _{H(0, 0.25)} | |
| BF Robustness Region | | 1 ⁻⁷ , 2.5 | | | 1 ⁻⁸ , 1.75 | | | 0.01, 0.5 | |

Note: **p* < .05.

Unwanted Sexual Attention. The frequency distribution of comments sent for the ten critical trials can be broken down as follows: 54.1 percent of men ($n = 40$) sent no harassing comments, 29.7 percent of men ($n = 22$) sent harassing comments ten percent of the time, 8.1 percent of men ($n = 6$) sent them on twenty percent of critical trials, 2.7 percent ($n = 2$) percent sent comments thirty percent of the time, and a final 2.7 percent ($n = 2$) sent harassing comments forty percent of the time. Thus, on average, men sent harassing comments in 6.67 percent of critical trials. See Figure 6 for a visualization of this distribution. Comments correlated with the RBA and chat overall among the other outcomes; no predictors; and narcissism and the masculine norm of being a playboy among the control variables. The exploratory regression analyses (Table 27) revealed inconclusive evidence for the null in all cases, with the exception of objectification, which showed moderate evidence for the null²⁸.

For the same reason as with the jokes, additional analyses were run that focused on behavior that occurred only after the first instance of sending a harassing comment (e.g. *after* negative feedback was received from the partner). The frequency distribution indicated that 83.8 percent of men sent no comments under these conditions ($n = 62$), 8.1 percent on men sent one additional comment after receiving negative feedback ($n = 6$), 2.7 percent sent two additional comments ($n = 2$), and 2.7 percent ($n = 2$) sent three

²⁸ Post-hoc achieved power range 0.13- 0.22

comments following initial feedback. The pattern of correlations was more limited under these conditions: among the outcome variables, comments were only correlated with the chat overall, and they were not correlated with any predictor or control variables. Exploratory regression models with the limited range of comment behavior regressed on each predictor variable were all non-significant ($ps > .13$); Bayes factors ranged from 0.11 (moderate evidence for the null) to 0.99 (inconclusive evidence for the null). Thus, the results did not indicate evidence of a role of dehumanization or objectification in men's harassing comments.

Table 27.

Exploratory Linear Regression Models, Chat- Unwanted Sexual Attention (Comments)

| | Model 1 | | | Model 2 | | | Model 3 | | |
|--|---------|----------------------------|----------|---------|----------------------------|----------|---------|----------------------------|----------|
| Predictor Variable Tested | β | <i>b</i> | <i>t</i> | β | <i>b</i> | <i>t</i> | β | <i>b</i> | <i>t</i> |
| 1. Human Nature | -.06 | -.57 | -.51 | | | | | | |
| 2. Human Uniqueness | | | | -.09 | -.76 | -.79 | | | |
| 3. Morality | | | | | | | -.07 | -.52 | -.55 |
| <i>F</i> | | .27 | | | .63 | | | .31 | |
| <i>df(df_{error})</i> | | 1(70) | | | 1(70) | | | 1(70) | |
| <i>Adjusted R²</i> | | -.01 | | | -.01 | | | -.01 | |
| 95% CI <i>b</i> (lower, upper) | | -2.78, 1.64 | | | -2.66, 1.15 | | | -2.40, 1.36 | |
| <i>Bayes Factor</i> _{H(0, scale of theory)} | | 0.99 _{H(0, 0.03)} | | | 0.98 _{H(0, 0.03)} | | | 0.99 _{H(0, 0.03)} | |
| BF RR | | 1 ⁻⁷ , 2.25 | | | 1 ⁻⁸ , 1.75 | | | 1 ⁻⁷ , 2 | |
| | Model 4 | | | Model 5 | | | Model 6 | | |
| | β | <i>b</i> | <i>t</i> | β | <i>b</i> | <i>t</i> | β | <i>b</i> | <i>t</i> |
| 4. Warmth | -.09 | -.83 | -.76 | | | | | | |
| 5. Competence | | | | -.06 | -.51 | -.52 | | | |
| 6. Objectification | | | | | | | -.18 | -.15 | -1.54 |
| <i>F</i> | | .58 | | | .27 | | | 2.36 | |
| <i>df(df_{error})</i> | | 1(70) | | | 1(70) | | | 1(67) | |
| <i>Adjusted R²</i> | | -.01 | | | -.01 | | | .02 | |
| 95% CI <i>B</i> (upper, lower) | | -3.01, 1.35 | | | -2.48, 1.46 | | | -0.35, 0.05 | |
| <i>Bayes Factor</i> _{H(0, scale of theory)} | | 0.98 _{H(0, 0.03)} | | | 0.99 _{H(0, 0.03)} | | | 0.16 _{H(0, 0.25)} | |
| BF Robustness Region | | 1 ⁻⁸ , 2 | | | 1 ⁻⁷ , 2 | | | 0.1, 0.5 | |

Note: **p* < .05.

Attitude Outcomes.

Rape Proclivity. The ASAI was correlated with the other outcome variables of likelihood to sexually harass and unfavorable attitudes towards rape victims. Warmth was the only correlated predictor, and correlated control variables included psychopathy, hostile sexism, masculine contingency, and the masculine norm of power over women. A hierarchical regression analysis in which warmth was entered in Step 1 ($b = -.12$, 95% CI [-0.23, -0.01], $S.E. = .06$, $\beta = -.24$, $p = .044$, Adj. $R^2 = .04$) did not retain this variable ($b = -.07$, 95% CI [-0.19, 0.04], $S.E. = .06$, $\beta = -.15$, $p = .188$) when tested in Step 2 (Adj. $R^2 = .19$) against psychopathy ($b = .11$, 95% CI [-0.12, 0.33], $S.E. = .11$, $\beta = .11$, $p = .350$, $B_{H(0, 0.5)} = 0.55$, $RR[0.2, 0.9]$), hostile sexism ($b = .06$, 95% CI [-0.08, 0.20], $S.E. = .07$, $\beta = .11$, $p = .418$, $B_{H(0, 0.63)} = 0.25$, $RR[0.4, 1.75]$), masculine contingency ($b = .11$, 95% CI [-0.05, 0.27], $S.E. = .08$, $\beta = .20$, $p = .165$, $B_{H(0, 0.5)} = 0.72$, $RR[0.3, 1.15]$), and power over women ($b = .12$, 95% CI [-0.11, 0.35], $S.E. = .12$, $\beta = .15$, $p = .314$, $B_{H(0, 0.38)} = 0.77$, $RR[0.02, 1]$). The Bayes factors for warmth at both Step 1, $B_{H(0, 0.75)} = 0.03$, $RR[0.6, 1.75]$, and Step 2, $B_{H(0, 0.75)} = 0.03$, $RR[0.7, 2.5]$, represented strong evidence for the null²⁹. The exploratory regression models (Table 28) indicated strong evidence for the null in all cases, with the exception of objectification, which showed moderate evidence for the alternative³⁰.

²⁹ Post-hoc achieved power step 1 = 0.41; step 2 = 0.89

³⁰ Post-hoc achieved power range 0.13- 0.41

Table 28.

Exploratory Linear Regression Models, Rape Proclivity (ASAI)

| Predictor Variable Tested | Model 1 | | | Model 2 | | | Model 3 | | |
|--|---------|---|--------|---------|---|------|---------|---|------|
| | β | b | t | β | b | t | β | b | t |
| 1. Human Nature | -.07 | -.03 | -.54 | | | | | | |
| 2. Human Uniqueness | | | | .01 | .01 | .06 | | | |
| 3. Morality | | | | | | | -.04 | -.02 | -.35 |
| F | | .26 | | | .01 | | | .13 | |
| $df(df_{error})$ | | 1(69) | | | 1(69) | | | 1(69) | |
| <i>Adjusted R</i> ² | | -.01 | | | -.01 | | | -.01 | |
| 95% CI b (lower, upper) | | -0.15, 0.09 | | | -0.10, 0.11 | | | -0.12, 0.08 | |
| <i>Bayes Factor</i> _{$H(0, \text{scale of theory})$} | | 0.06 _{$H(0, 0.75)$} | | | 0.08 _{$H(0, 0.75)$} | | | 0.05 _{$H(0, 0.75)$} | |
| BF RR | | 0.25, 1.5 | | | 0.5, 1.75 | | | 0.25, 1.25 | |
| | Model 4 | | | Model 5 | | | Model 6 | | |
| | β | b | t | β | b | t | β | b | t |
| 4. Warmth | -.24 | -.12 | -2.05* | | | | | | |
| 5. Competence | | | | -.04 | -.02 | -.35 | | | |
| 6. Objectification | | | | | | | -.02 | -.01 | -.20 |
| F | | 4.20 | | | .12 | | | .04 | |
| $df(df_{error})$ | | 1(69) | | | 1(69) | | | 1(66) | |
| <i>Adjusted R</i> ² | | .04 | | | -.01 | | | -.02 | |
| 95% CI B (upper, lower) | | -0.23, -0.01 | | | -0.12, 0.09 | | | -0.01, 0.01 | |
| <i>Bayes Factor</i> _{$H(0, \text{scale of theory})$} | | 0.03 _{$H(0, 0.75)$} | | | 0.06 _{$H(0, 0.75)$} | | | 8.59 _{$H(0, 6.25)$} | |
| BF Robustness Region | | 0.15, 1 | | | 0.25, 1.5 | | | 6.15, 6.25 | |

Note: * $p < .05$.

Unfavorable Attitudes Towards Rape Victims. The ARVS was correlated with the other outcome measures for chat jokes, chat overall, rape proclivity, and likelihood to sexually harass. It was correlated with human uniqueness and warmth among the predictors, and control variable correlates included narcissism, hostile sexism, masculine contingency, the masculine norm of power over women, and social desirability. A hierarchical regression was run in which human uniqueness ($b = -.07$, 95% CI [-0.17, 0.03], $S.E. = .05$, $\beta = -.19$, $p = .152$) and warmth ($b = -.08$, 95% CI [-0.20, 0.03], $S.E. = .06$, $\beta = -.18$, $p = .155$) were entered in Step 1 (Adj. $R^2 = .07$), and narcissism ($b = .11$, 95% CI [-0.06, 0.28], $S.E. = .09$, $\beta = .14$, $p = .193$, $B_{H(0, 0.5)} = 0.68$, $RR[0.3, 1]$), hostile sexism ($b = .16$, 95% CI [0.04, 0.27], $S.E. = .06$, $\beta = .33$, $p = .008$, $B_{H(0, 0.63)} = 6.79$, $RR[0.4, 1.5]$), masculine contingency ($b = .04$, 95% CI [-0.08, 0.17], $S.E. = .06$, $\beta = .08$, $p = .504$, $B_{H(0, 0.5)} = 0.24$, $RR[0.375, 1.25]$), power over women ($b = .12$, 95% CI [-0.07, 0.31], $S.E. = .09$, $\beta = .16$, $p = .203$, $B_{H(0, 0.38)} = 0.91$, $RR[0.3, 1.15]$), and social desirability ($b = -.14$, 95% CI [-0.27, -0.01], $S.E. = .07$, $\beta = -.20$, $p = .046$, $B_{H(0, 0.5)} = 0.05$, $RR[0.2, 0.675]$) were added in Step 2 (Adj. $R^2 = .38$). Neither human uniqueness ($b = -.07$, 95% CI [-0.15, 0.02], $S.E. = .04$, $\beta = -.17$, $p = .130$) or warmth ($b = -.02$, 95% CI [-0.12, 0.08], $S.E. = .05$, $\beta = -.04$, $p = .710$) was retained in Step 2. The Bayes factors at Step 1 for human uniqueness ($B_{H(0, 0.75)} = 0.03$, $RR [0.6, 2.5]$) and warmth ($B_{H(0, 0.75)} = 0.03$, $RR[0.65, 2.5]$) represented strong evidence for the null, and at Step 2 the evidence remained strongly in favor of the null for both human uniqueness ($B_{H(0, 0.75)} =$

0.07, $RR[0.5, 2]$) and warmth ($B_{H(0, 0.75)} = 0.05$, $RR[0.3, 1.25]$)³¹. In our exploratory regression models (Table 29), the Bayes factors showed evidence ranging from strong to very strong in favor of the null in all cases, with the exception of objectification, for which there was moderate evidence for the alternative³².

³¹ Post-hoc achieved power step 1 = 0.53; step 2 = 0.99

³² Post-hoc achieved power range 0.13- 0.58

Table 29.

Exploratory Linear Regression Models, Unfavorable Attitudes Towards Rape Victims (ARVS)

| Predictor Variable Tested | Model 1 | | | Model 2 | | | Model 3 | | |
|--|---------|----------------------------|----------|---------|----------------------------|----------|---------|----------------------------|----------|
| | β | <i>b</i> | <i>t</i> | β | <i>b</i> | <i>t</i> | β | <i>b</i> | <i>t</i> |
| 1. Human Nature | -.19 | -.09 | -1.62 | | | | | | |
| 2. Human Uniqueness | | | | -.27 | -.11 | -2.33* | | | |
| 3. Morality | | | | | | | -.12 | -.05 | -1.02 |
| <i>F</i> | | 2.62 | | | 5.43 | | | 1.04 | |
| <i>df(df_{error})</i> | | 1(70) | | | 1(70) | | | 1(70) | |
| <i>Adjusted R²</i> | | .02 | | | .06 | | | .00 | |
| 95% CI <i>b</i> (lower, upper) | | -0.19, 0.02 | | | -0.20, -0.02 | | | -0.14, 0.04 | |
| <i>Bayes Factor</i> _{H(0, scale of theory)} | | 0.03 _{H(0, 0.75)} | | | 0.02 _{H(0, 0.75)} | | | 0.03 _{H(0, 0.75)} | |
| BF RR | | 0.15, 1 | | | 0.5, 1.25 | | | 0.15, 1 | |
| | Model 4 | | | Model 5 | | | Model 6 | | |
| | β | <i>b</i> | <i>t</i> | β | <i>b</i> | <i>t</i> | β | <i>b</i> | <i>t</i> |
| 4. Warmth | -.27 | -.12 | -2.33* | | | | | | |
| 5. Competence | | | | -.17 | -.07 | -1.42 | | | |
| 6. Objectification | | | | | | | -.07 | -.01 | -.57 |
| <i>F</i> | | 5.41 | | | 2.03 | | | .33 | |
| <i>df(df_{error})</i> | | 1(70) | | | 1(70) | | | 1(67) | |
| <i>Adjusted R²</i> | | .06 | | | .01 | | | -.01 | |
| 95% CI <i>B</i> (upper, lower) | | -0.22, -0.02 | | | -0.16, 0.03 | | | -0.01, 0.01 | |
| <i>Bayes Factor</i> _{H(0, scale of theory)} | | 0.02 _{H(0, 0.75)} | | | 0.03 _{H(0, 0.75)} | | | 4.11 _{H(0, 6.25)} | |
| BF Robustness Region | | 0.5, 2.25 | | | 0.15, 1 | | | 6.15, 7.25 | |

Note: **p* < .05.

Sexual Harassment Interest. The LSH scale correlated with other outcome measures including the intrusive behavior paradigm, the RBA, rape proclivity, and unfavorable attitudes towards rape victims. While not correlated with any predictors, it was correlated with multiple control variable, including narcissism, psychopathy, hostile sexism, masculine contingency, the masculine norm of being a playboy, and the masculine norm of power over women. Exploratory regression analyses (Table 30) revealed moderate evidence for the null in the cases of human nature, human uniqueness, and morality; strong evidence for the null in the cases of warmth and competence; and inconclusive evidence for the alternative in the case of objectification³³.

³³ Post-hoc achieved power 0.13, all models.

Table 30.

Exploratory Linear Regression Models, Sexual Harassment Interest (LSH)

| Predictor Variable Tested | Model 1 | | | Model 2 | | | Model 3 | | |
|--|---------|----------------------------|------|---------|----------------------------|------|---------|----------------------------|------|
| | β | b | t | β | b | t | β | b | t |
| 1. Human Nature | .03 | .02 | .23 | | | | | | |
| 2. Human Uniqueness | | | | .12 | .06 | 1.04 | | | |
| 3. Morality | | | | | | | -.11 | -.05 | -.94 |
| F | | .06 | | | 1.08 | | | .89 | |
| $df(df_{error})$ | | 1(70) | | | 1(70) | | | 1(70) | |
| <i>Adjusted R</i> ² | | -.01 | | | .01 | | | -.01 | |
| 95% CI b (lower, upper) | | -0.11, 0.14 | | | -0.05, 0.17 | | | -0.16, 0.06 | |
| <i>Bayes Factor</i> _{H(0, scale of theory)} | | 0.11 _{H(0, 0.75)} | | | 0.22 _{H(0, 0.75)} | | | 0.20 _{H(0, 0.75)} | |
| BF RR | | 0.15, 1 | | | 0.25, 1.75 | | | 0.25, 1.5 | |
| | Model 4 | | | Model 5 | | | Model 6 | | |
| | β | b | t | β | b | t | β | b | t |
| 4. Warmth | -.10 | -.05 | -.83 | | | | | | |
| 5. Competence | | | | -.09 | -.04 | -.75 | | | |
| 6. Objectification | | | | | | | .10 | .01 | .82 |
| F | | .69 | | | .56 | | | .67 | |
| $df(df_{error})$ | | 1(70) | | | 1(70) | | | 1(67) | |
| <i>Adjusted R</i> ² | | -.01 | | | -.01 | | | -.01 | |
| 95% CI B (upper, lower) | | -0.18, 0.08 | | | -0.16, 0.07 | | | -0.01, 0.02 | |
| <i>Bayes Factor</i> _{H(0, scale of theory)} | | 0.05 _{H(0, 0.75)} | | | 0.05 _{H(0, 0.75)} | | | 1.27 _{H(0, 6.25)} | |
| BF Robustness Region | | 0.25, 1.25 | | | 0.25, 1.25 | | | 6, 6.5 | |

Note: * $p < .05$.

Discussion

This study to a large extent found evidence in support of its first aim, validating the newly developed intrusive behavior paradigm. The frequency distributions for variability in men's behavior, as in Facebook pilot study 2 (Chapter 4), mirrored those that could be expected for arguing that this paradigm captures in miniature a set of behaviors analogous to those found in the real world constituting intrusive and aggressive behavior. As obvious differences in behavior conducted online verses in the real world (e.g. physical contact) are not a main focus here, we limit the discussion of this issue to the methodological purpose of the task. Indeed, while these qualitative differences in experience do include physical contact, that is likely where they end in some of the most important ways- the intentions of perpetrator, effect on the victim, and potential for a range of extremity. Additionally, while it could be argued that men are likely to be more willing to engage in aggressive behavior online verses in the real world (possibly due to the depersonalizing effect of this type of context), the variability demonstrated in our results suggest that the measure itself is viable in acting as it was intended- as an *analogous approximation* of offline behaviors, and a direct measure of online behaviors, which is naturalistic and ethical to implement.

The measure was positively correlated with behavioral measures which included the rape behavior analogue and sexual harassment interest (regardless of coding time); it was negatively correlated with social

desirability for the full coding time and not correlated with general curiosity for either coding time. However, the paradigm did not correlate with some other outcomes, including the chat behaviors, and the three attitudes measures. Thus, it would thus appear that the intrusive behavior paradigm correlated best with more subtle existing measures, or those which include behaviors and attitudes which are open to ambiguous interpretations and are less explicit. In this way, it is analogous to those particular sexually aggressive behaviors which include intentional ambiguity for the perpetrator, as well as surveillance and intrusive behaviors which often share this inherent quality. The room for allowance for alternative explanations and justifications may make these types of harms particularly insidious, and even lay a foundation for further harms and revictimizations, including gaslighting of women who become aware of the behavior and express their discomfort.

The second aim, to explore further the correlational relationship between dehumanization and objectification and sexual aggression in a lab setting, did not yield support of our hypotheses. Few correlations were found between our predictors and outcome variables under these conditions, and the pattern of Bayes analyses across all outcome variables tended to favor the null. Implications of the results of this study, and the full body of work presented in all preceding chapters, are discussed in Chapter 7.

Chapter 7- General Discussion & Conclusions

Summary and Discussion of Thesis Results

This thesis set out to accomplish two overarching aims: to explore the role of dehumanization and objectification in men's sexual aggression perpetration, and to develop a novel behavioral measure of these types of behaviors. It has been largely successful in accomplishing each of these, as evidenced in the five empirical chapters presented hitherto and summarized below. Sexual aggression is understood in this thesis as a continuum, and thus was treated with multiple measures tapping a range of behaviors and attitudes. Specifically, from chapter 2, Study 1 initially examined sexual harassment interest, rape proclivity, and unfavorable attitudes towards rape victims using a correlational design. Study 2, also from chapter 2, used an experimental design, added the rape behavior analogue, and did not measure sexual harassment interest. In the lab study (chapter 6) sexual aggression was measured as broadly as possible, tapping sexual harassment interest, unfavorable attitudes towards rape victims, rape proclivity, gender harassment, unwanted sexual attention, a rape behavior analogue, and online intrusive behaviors. Dehumanization was conceptualized throughout based on the dual-model, examining both mechanistic and animalistic dehumanization (Haslam, 2006). Objectification was conceptualized as a particular manifestation of dehumanization and measured such that it tapped reduction of the subject to the appearance of their body (e.g. Noll & Fredrickson, 1998).

In the first of the empirical chapters (2 and 3) results indicated promising support for a relationship between dehumanization (particularly animalistic dehumanization) and sexual aggression, both correlationally and experimentally, when using online samples of men and controlling for a range of additional variables. However, the experimental effect was limited to differences in the strength of correlations (as opposed to mean group differences) and results did not support a role of objectification. Chapter 4 began to lay the foundations for bringing a test of the effect of interest into a more realistic (lab) setting. It began presenting the process of planning, developing, and building support for a novel behavioral measure of men's sexual aggression- the intrusive behavior paradigm³⁴- and validated translated materials to be adapted for use in a chat paradigm with an English-speaking sample. Chapter 5 also aimed to prepare materials, in the form of videos, for use in the planned lab study to experimentally manipulate men's dehumanization and objectification of a woman in that setting. However, this series of studies yielded a surprising pattern of results considering past work – here, men did not differentially dehumanize or objectify the woman presented based on the video conditions. Thus, the planned lab study was amended to employ a correlational design. Chapter 6 presented the results of this. Results did not offer correlational support for a

³⁴ While not our explicit intent at the outset, the deliberately flexible methods and analyses employed in Facebook pilots 1 & 2, which we have referred to as “data driven,” can be justified in retrospect as complying with some tenets of grounded theory (as cited in Ferrie, 2019), particularly the use of open coding.

role of dehumanization and/or objectification in men's sexual aggression when testing was conducted more realistically and in person. The second overall aim of this thesis was met, however, by successfully implementing the newly developed intrusive behavior paradigm, which uniquely taps male online surveillance behaviors and correlates with other existing measures of sexual aggression, especially those which include an element of attributional ambiguity.

Strengths and Implications. The discussion to follow will focus separately on the two thesis aims and their respective results. We will cover how the present work fits within the existing literatures on dehumanization/objectification and sexual aggression respectively, as well as situating it within some 'sister' areas of research drawn from law and feminist theory, where applicable.

Aim 1. In relation to exploring the role of dehumanization and objectification in men's sexual aggression, this thesis has provided novel information that extends our existing empirical understanding of these processes (Gervais et al., 2014; Haikalis, et al., 2015; Loughnan et al., 2013; Rudman & Borgida, 1995; Rudman & Mescher, 2012). While our initial results (Chapter 2) point to a small but robust effect of animalistic dehumanization on men's sexual aggression³⁵, further and more realistic

³⁵ It should be noted that regression, as opposed to structural equation modeling (SEM), was used in establishing this effect. This was done in line with the author's area of statistical experience. In retrospect, the use of regression may represent a limitation of the work, particularly given recent research showing that inclusion of covariates/confounding variables in regression (as was done here) may inflate Type I error rates (Westfall & Yarkoni, 2016).

testing (in the video validation and lab studies) did not support this conclusion in full. It seems that these variables fail to relate or predict in a context which provides more than minimal information about the subject, which is possible good news for women. While our results imply that relatively impersonal still-images may indeed be treated in dehumanizing ways that could lead to seeing their female subjects as potential victims of sexual aggression, even minimal additional information about a woman presented in this way can counteract this. So, while an intuitive response to the possibility of being treated in derogating ways (particularly online) may be for many women to limit their personal presence in these public/semi-public spaces, it could be that persisting in participating in personalizing ways is somewhat more likely to be effective in avoiding, or as least minimizing, mistreatment in the form of dehumanization and objectification therein by presenting oneself as a whole person.

Although it is certainly improbable that such active participatory measures can keep all degradation at bay in a patriarchal society, by emphasizing one's identity as a full human being, an apparent buffer is possibly enacted against (some) online and offline male mistreatment. Since women should not have to exclude and censor themselves from public spaces, cyber or otherwise, this work offers some support for their not doing so with greater confidence. On the other hand, images posted online can be and often are taken out of their original context, which would undermine this buffer, as seen in their (mis)use in the burgeoning field of image-based

sexual aggression (discussed in more detail later in this chapter). In these cases, images taken from a relatively personalized context (e.g., a woman's online account) may then be used in reductive ways that encourage dehumanization and aggressive attitudes. With this possibility in mind, individual implementation of greater security and privacy measures would still unfortunately make sense as a necessary preventative and safety measure to control who may have access to personal posts.

Regarding the field of dehumanization and objectification in particular, our combined results from the preliminary video validation studies conducted in Chapter 5 and our lab study from Chapter 6 offer a pattern that does not indicate support for the realistic manipulation of state dehumanization and/or objectification of others. At first glance, this is somewhat problematic for interpreting the wealth of existing literature which has relied on such experimental manipulations, including some of the work regarding sexual aggression (e.g. Loughnan et al., 2013). This issue could be especially pertinent to the field of objectification, which makes an explicit theoretical distinction between state and trait varieties of the construct to draw conclusions about the "real world." However, the fact that these processes do seem to operate in response to images with minimal information about their subjects means they are still quite relevant within our consistently (unavoidable) image saturated modern society. Indeed, this problem remains applicable not only to image-based depictions of women who are likely to remain strangers such as models, but to "real" women as well. For example,

single images are representative on common dating apps (Ward, 2016a, 2016b) and used to form immediate initial impressions of a possible partner. It is also common practice for potential employers to seek online profiles of job candidates (Brown & Vaughn, 2011; Sameen & Cornelius, 2013), and with the privacy settings most women may feel increase their personal safety in place, the results of these searches may be limited to viewing a single image. Thus, dehumanizing and/or objectifying effects may persist in informing both personal and professional domains of women's lives, even having potentially increased their influence with the advent of social media and the resulting commonality of self-presentation and curation of personal image. Additionally, regardless of invoked group differences, individual differences in likelihood to dehumanize and objectify still exist and inform behavior, as shown in this correlational work.

Aim 2. The work presented genuinely extends our understanding of the broad field of sexual aggression by creating and providing initial validation of the first measure of its kind – the intrusive behavior paradigm. We had three aims in developing the intrusive behavior paradigm, including that it be: (1) realistic and ecologically valid, (2) effective for implementation in practice, and (3) able to circumvent the limitations of prior behavioral measures of sexual aggression whilst remaining ethically viable. We were successful in each of these, as reflected in the two pilot studies (Chapter 4) and the implementation of the paradigm in full in Chapter 6. Men reported that they believed the account they interacted with was real, and the

paradigm was strengthened by using not only a real popular social media platform, but participants' real social media accounts. The implementation was effective for easy and naturalistic integration into the flow of the broader methods of the study, a result which was assessed in practice. Finally, in addition to explicit reports (in the first pilot) that participants would hypothetically be comfortable with the use of screen-capture, participants in the second pilot and lab study were also comfortable with the use of the actual resulting video data and their experiences within the study, supporting the ethical use of this type of methodology and data information. An additional major strength of our paradigm is that it attempts to measure not only an emerging problem in the field of sexual aggression as a whole, but also to merge provision of empirical evidence with both new and established understandings of such gendered harassment more broadly, including those drawn from both the fields of law and feminist theory. These are discussed next.

While we did set out to develop a general behavioral measure of male sexual aggression, the data driven process we employed throughout this thesis led ultimately to a more focused measure, in the sense that the intrusive behavior paradigm is especially relevant to assessing the emerging phenomenon of online sexual aggression, or "image-based sexual aggression," (behaviors involved in "using technology to perpetrate or extend the harm of sexual assault, extend control and abuse in a domestic violence situation, or distribute sexual or intimate images of another without their

consent,” Henry & Powell, 2016a, pp. 397). However, we believe the measure can also be used more generally, as the underlying and gendered mechanisms involved in sexual aggression are likely the same or similar regardless of whether they take place in an online or offline context (McGlynn, Rackley, & Houghton, 2017). Indeed, these online behaviors are explicitly theorized to exist not only as a continuum in and of themselves, but also along the wider continuum of sexual aggression (McGlynn et al., 2017). Thus, the intrusive behavior paradigm is both consistent with established understandings of men’s sexual aggression (Gannon et al., 2008) and extends the scope for potential studies of emerging (online and technology-facilitated) manifestations thereof.

Online sexual aggression of this kind falls under the category covering a diverse range of behaviors otherwise known as ‘technology-facilitated sexual violence/coercion’ and/or ‘image based sexual abuse/exploitation,’ with the terminology employed varying somewhat among scholars. Behaviors addressed include, but are not limited to, “revenge porn,” cyber-harassment, and cyber-stalking. The field represents a growing area of interest, particularly in the legal domain in very recent years (Henry, 2019; Henry & Powell, 2015, 2016a, 2016b; Maddocks, 2018; McGlynn & Rackley, 2017; McGlynn, et al., 2017; Powell & Henry, 2016; Powell et al., 2018; Walker & Sleath, 2017). This literature asserts that such online behaviors come with their own set of harms (e.g. individual and cultural, McGlynn & Rackley, 2017; psychological, Bates, 2015; McGlynn & Johnson, 2019; Henry &

Powell, 2015), which overlap significantly with the harms of sexual aggression in general. In representing both continuity with and an extension of current conceptualizations of the harms of sexual aggression, image-based sexual aggression informs the broader enforcement of sexual non-consent as acceptable in society in new ways. In other words, regarding such online aggression, “it plays a role in enabling and maintaining a social and political context conducive to high levels of sexual coercion,” (McGlynn & Rackley, 2017, p. 14).

Unlike more traditional conceptualizations of sexually aggressive behavior, much online sexual aggression is generally not well protected or even consistently acknowledged under either criminal or civil law or policy (Henry & Powell, 2016a; McGlynn & Rackley, 2017). As these authors point out, problems with relying fully on legal avenues of redress in these emerging cases include the inherent nature of pacing involved in legal channels: the law is slow to adapt to counter the changing tools for aggression and abuse and does so post-hoc as cases emerge individually; or otherwise it is too hasty and addresses these manifestations poorly. This occurs both at the level of new law being drafted in response to changing needs, and implementation of the existing codes of law via criminal justice system agencies and processes. Thus, the law is not, on its own, by any means adequate to address online sexual aggression.

In line with this, Henry and Powell (2016a) emphasize that the law should not, and indeed at this time cannot, be the only means of addressing

this problem. They suggest that the culture of digital communities and online service hosting providers themselves also have a role to play in fostering conditions that make online abuse possible, and therefore they should take on more responsibility in supporting a multi-modal approach to preventing and combating the problem. Henry and Powell (2016a) additionally argue for the development of a set of “digital sexual ethics.” On the other hand, McGlynn and Rackley (2017), while not dismissing the need to confront cultural harms, emphasize the potential for harnessing both the expressive/symbolic and coercive/deterrent power of criminal and civil law going forward in shaping cultural standards and practices. In short, this new problem is challenging to address, but demands more timely legal action as well as triangulated techniques to combat it that are drawn from other sources within the wider cultural and social context. This process can be aided by increasing attention to gathering empirical evidence supporting the importance of these types of changes.

Our measure provides an avenue for such an empirical extension within this sister literature and aligns well with its existing ideas. Indeed, the correlations between the intrusive behavior paradigm and more ambiguous existing measures of sexual aggression are entirely consistent with legal scholars’ theoretical conceptualizations of the seriousness of image-based sexual violence as inherently downplayed and normalized - as seen in the inflammatory, catchy, and media-friendly language often used to describe these behaviors (e.g., “revenge porn,” the “fappening,”

upskirting/downblousing - Henry, 2019; McGlynn & Johnson, 2019). We also provide a novel means of extension through engaging with understanding the *underpinnings* of these online and “real-world” aggressive behaviors. In addition, these legal writers have touched upon the role of objectification as one of several possible mechanisms enabling men to engage in these behaviors (e.g. Henry & Powell, 2016a; McGlynn & Rackley, 2017), simultaneously aligning directly with the present body of work and offering avenues for future exploration.

In addition to these legal perspectives, some feminist theorists have begun to engage with the growing interest in general modern technological surveillance, and particularly online surveillance as a means of exerting control over women (Abu-Laban, 2015; Dubrovsky & Magnet, 2015). Among the number of behaviors which can be classified as sexual aggression and/or coercion and that take place in a technology-based context, those which employ mechanisms of surveillance, and/or unconventional forms of public voyeurism, are of particular relevance for empirically merging these fields via application of the intrusive behavior paradigm. This is due to the fact that the paradigm directly measures men’s surveillance behaviors directed towards a woman.

In feminist circles, discussion of such surveillance of women online has touched upon applying the idea of the panopticon (Bentham; Foucault, 1975, 1977) as an analogy within the social media context (Abu-Laban, 2015; Gill, 2019; Winch, 2013). While of course not developed to be specific

to women, a broad application of the panopticon analogy to gendered experiences has thus been made. Based on the power dynamic implied in this analogy as it relates to social media, there exists a perceived entitlement or right to male voyeurism (Monahan, 2010) and even violence (Mason & Magnet, 2012) towards women that is both specific to the online context and often crosses over to the “real world.”

Feminist theoretical work on surveillance (Abu-Laban, 2015; Gill, 2019; Winch, 2013) has to date primarily focused on top-down more official or institutionalized forms of surveillance, horizontal peer-based surveillance, and self-surveillance. I argue that this idea of surveillance for the purposes of controlling women, as embodied in the analogy of social media acting within the framework of the panopticon, can and should be extended to the more obvious unequal (everyday) interpersonal interactions that exist in technological spaces. Based on inherently unequal and gendered dynamics between men and women, with the lines between the cyber and “real” world being increasingly blurred, a power dynamic in which men feel entitled to observe and surveil women is likely to not only exist, but to exist well within the everyday awareness of women, regardless of whether they are actually “watched” at any given time. Such hyper-awareness could then have a major impact on women’s behavior and lived experiences, resulting ultimately in self-surveillance and limitations directly akin to those first covered in by Fredrickson and Roberts more than two decades ago, but unique in presentation to the modern tech age. The male gaze, as classically

conceptualized in objectification theory (Fredrickson & Roberts, 1997), neatly unifies with the role of the (online) male observer in the panopticon analogy, operating in these spaces as a tool for both direct (external) and indirect (internalized) exertion of male power and regulation over women.

Importantly, through the use of the intrusive behavior paradigm, this dynamic can be captured empirically- by measuring men's online behaviors in way that is both ethically sensitive to participants and does not rely on the use of a 'victim' - as we move forward in building an understanding of these emerging, stealthy, and diverse manifestation of sexual aggression in the digital age.

Limitations & Future Directions. Interpretations of the results of this thesis should be made with some key limitations in mind³⁶. However, as discussed below, many of these apparent limitations may prove useful in providing directions for further study that will ultimately enrich our understanding of the nuanced problems of dehumanization, objectification, and sexual aggression.

As previously mentioned in the discussion of Chapter 2 (Bevens & Loughnan, 2019), only one facet of objectification was measured in this thesis, via use of the other-objectification questionnaire. The common

³⁶ This discussion of limitation focuses on conceptual issues. However, it should also be noted that one limitation of this body of work as a whole is the issue of statistical power. While there was no sufficiently similar existing literature on which to conduct initial a priori power analyses (e.g. Study 1), we arguably could have based subsequent studies we conducted on our own results, as opposed to the use of a blanket expected medium effect size estimate. This choice was justified at the time with optimism about the size of the "true" effect, as well as awareness of the limitations of our own initial studies, which could have influenced the small effect sizes garnered therein. Given these small effect sizes, achieved power in noted.

practice of measuring objectification only in the form of a relative emphasis on valuing the importance of appearance over competence in this way, whether as it relates to the self (Noll & Fredrickson, 1998) or others (Strelan & Hargreaves, 2005), is an ongoing and major problem not only in the present work but across the field. As a result of limited existing measures, we have fallen to using the one we have to tap the whole construct, regardless of conceptual nuances in the meaning of objectification (particularly those provided by Nussbaum, 1995, 1999). Indeed, we do not even currently regularly tap all of the three facets of (self) objectification from objectification theory itself (Fredrickson & Roberts, 1997). While I have already pointed to the possibility of using a more behavioral existing measure (e.g. Davidson et al., 2013) in future work, this will not be sufficient to address the wider problem. A much more helpful direction would be the development of novel instruments which assess both the whole construct and its individual facets, via sub-scales³⁷ as well as measures which integrate objectification with our understanding of the larger concept of dehumanization. We believe this thesis in particular would have been strengthened through a measure of objectification that included specific elements of Nussbaum's (1995, 1999)

³⁷ As helpfully pointed out by one participant in a recent study conducted by the primary researcher outside of this thesis, the SOQ and by extension OOQ are entirely inapplicable to populations who are not able-bodied, but these people do experience objectification. This, too, should be taken into account in future work developing more inclusive and nuanced measures of objectification, particularly since the consequences of these processes are so severe. As related to this thesis specifically, this is an acknowledged limitation, and we are aware that sexual aggression perpetrated against people with disabilities is a problem which merits greater attention in future.

conceptualization- denial of autonomy, instrumentality, violability, and denial of subjectivity. Happily, we do know of some work in progress with an end to create and validate a series of measures which tap the seven facets of objectification as conceptualized by Nussbaum (Ma, Loughnan, Weiss, & Stanton, 2019), reflecting growing awareness of and action to address this field-wide issue in future.

Thus far, I have covered a common measurement problem, but this thesis also sheds light on our limited understanding in the fields of dehumanization and objectification regarding common experimental manipulations. In an earlier section of this chapter I cover reasons for not writing off simple image-based manipulations, but there remains as a limitation the evidenced but little understood inability to induce group differences when more than minimal information about a subject is present. This raises two key questions that should be addressed in future research: (1) What exactly is it about more realistic depictions of women that make them less likely to be dehumanized/objectified, and (2) where does the threshold for a change in quality of treatment lie? In other words, is the effect additive up to some crucial tipping point, and/or is there a single common active ingredient? While in this thesis we attempted to employ the strongest possible manipulation through the combination of multiple individually previously successful manipulations (Bernard et al., 2015, study 2; Holland & Haslam, 2013; Loughnan et al., 2013; Pacilli et al., 2017; Vasquez et al., 2017) this apparently failed. Meticulously breaking down and parsing out

what the critical elements to the attribution of humanness to a subject are in order to answer the above questions will aid in using informed manipulations which could then potentially be employed to more precisely target different types of dehumanization and objectification, as well as garnering a better more general understanding of (de)humanization of others.

Another potential limitation of the intrusive behavior paradigm which should be discussed is the possible role of reactivity from the participants. While explicit attention was not drawn to the use of screen-capture, they did know that they were in a psychology study and were aware of the potential for observation.³⁸ However, the fact that we still saw intrusive behavior occurring under the circumstances of this study - participants knew they may be observed and that they would be left alone for only a very limited time - actually lends greater strength to the paradigm. It is highly probable that the behaviors this method taps would be more extreme and extensive without the social constraints of the experimental setting, and thus that setting provides a microscopic view under controlled circumstances of entitlement to and engagement in a continuum of wider surveillance behaviors employed by men.

³⁸ This leads to the necessity to briefly mention researcher reflexivity. I am quite self-aware that in conducting these sessions the effect could (but is arguably unlikely to be) related to some feature of myself as a young female researcher. I believe results would replicate if conducted with a different female researcher of similar age because the most salient feature that would be of influence from either myself or any other researcher-participant dyad in this type of study would likely be gender. However, this remains to be tested, and is an avenue for further validation of the intrusive behavior paradigm. In this same line of thought, I am also aware that my own feminism and feminist theory more generally are important foundations to this work, which directly influence my conceptualizations, methodology, and interpretations of results.

Lastly, our discussion of limitations necessitates acknowledging that this initial validation of the intrusive behavior paradigm was conducted with heterosexual British men who held an expectation of interacting with a heterosexual woman only, and results cannot be applied to other group configurations without first conducting further preliminary studies. Additionally, as regards this type of (heterosexual male - heterosexual female) dyad, while our results show no correlations between these behaviors and socially desirable responses or general curiosity, additional tests which rule out other possible motives and correlates would increase confidence in the measure tapping its intended construct. Some potentially fruitful avenues for testing this methodology with other populations would include adapting it for use with women interacting with male and female profiles. In these cases, we can speculate that the motivations behind surveillance behaviors (especially women surveying other women) would be quite different from those of men surveying women, but this is indeed an empirical question. We also think that extending the validation process to include the range of existing gender identities and sexual orientations is particularly important, given research showing that image-based sexual aggression is actually more prevalent among lesbian, gay, and bisexual people than heterosexual groups (McGlynn & Johnson, 2019), wherein we

believe the theoretical implications of the paradigm are similar to those for heterosexual dyads³⁹.

In contrast, we would expect the processes examined in this thesis to differ from those relevant to heterosexual dyads when examining certain different group configurations, along with the *implications* of any results garnered from different groups and/or types of relationships. Specifically, we next offer some thoughts on differing implications with regards to the two major aims of the present work cross-culturally and within established close relationships (e.g. friendships, romantic relationships).

Firstly, regarding the role of dehumanization and objectification in men's sexual aggression, we can speculate that stronger effects may emerge in more intensely patriarchal cultures. More specifically, while patriarchy is arguably inherent to the majority of cultures, it is more socially acceptable in some, and collectively denied in others despite its presence. Thus, for example, we would expect cultures where patriarchy manifests most commonly in higher benevolent sexism and paternalism to differ from those where more blatant hostile sexism is a predominant social norm. Indeed, little to no effect may be found in the latter (as in the present work), while the former lends itself to specific predictions about animalistic and

³⁹ We additionally would not expect overall differences between sexual orientations from the present work with heterosexuals with regards to the role of dehumanization and objectification, although it is possible that sub-groups within homosexual communities who are especially likely to engage in objectifying cultural practices (for example drag queens) would show such differences. This is an avenue for future work.

mechanistic dehumanization which may occur not only in questionnaire contexts, but also a realistic lab setting.

Regarding the second aim of this thesis, we would expect stronger effects to emerge for the intrusive behavior paradigm in more openly patriarchal cultures but assert that the implication would be *less* analogous to sexual aggression because the behavior would be seen even more strongly as normal and culturally unproblematic. This would undermine an argument that men are aware they are behaving in an aberrant and inappropriate fashion, and we would expect a much more normal frequency distribution to emerge than that observed in the present work.

Within existing close relationships, we wouldn't expect dehumanization and objectification to play much role in friendships but can speculate on possible effects within romantic relationships. While there is ongoing discussion and debate that in certain contexts, such as sexual relationships, objectification can be gratifying and even wanted (e.g. Moffitt & Sczymanski, 2011; Nussbaum, 1999), a more compelling argument comes from Calogero (2013) which situates this type of experience for women within problematic system justification⁴⁰. Additionally, of particular note to undermining arguments for "positive" experiences of objectification is the fact that regardless of women's subjective experience of objectification, the long-established negative consequences are not mitigated (e.g. Tiggemann &

⁴⁰ Calogero (2013) also discusses the role of objectification as a barrier to feminist collective action.

Boundy, 2008). In light of this, and because we conceptualize objectification as a particular manifestation of dehumanization in the present work, we would expect that both dehumanization (especially animalistic dehumanization) and objectification would represent ways of supporting patriarchal values and would be most relevant in the context of negative and even abusive romantic and sexual relationships. This then feeds into the implications for our intrusive behavior paradigm- we believe the implications would be particularly malignant in the context of established romantic relationships where monitoring a partner is a well-established element of many abusive relationships. Conversely, this would possibly be benign and even positive in the context of adult friendships where such *reciprocal* behaviors may represent a simple way of keeping up with each other's lives.

Practical Applications

A major practical application implied by the in-depth discussion of legal perspectives presented hitherto is that attempts should be made to address, to the extent that it is possible to do so, the problem of online sexual aggression through these channels. That discussion also brings up an explicit need to employ alternative routes alongside official policy for preventing and responding to (online) sexual aggression, for example by social restraints from alternative group dynamics and norms. Doing so would effectively de-center the law as a primary solution to this issue, and perhaps more appropriately situate it as a starting point for cultural change surrounding the problematic acceptance of sexual aggression in general.

This brings us to the question of what that might look like in practice, and how research might inform and drive initiatives for productive change of this kind.

The discussion in Chapter 2 mentions the potential for applying the early results of this thesis to educational initiatives and clinical interventions by emphasizing women's human uniqueness. This remains an especially viable avenue given further results we have since obtained and presented in Chapter 5 (video pilots), showing the failure to dehumanize or objectify more realistic depictions of women. Additionally, having conducted the Chapter 4 pilots and the lab study, each showing empirical evidence of men's engagement in the online intrusive behaviors our paradigm set out to capture, raises the possibility of integrating information about newer forms of image-based and technology-facilitated sexual aggression into educational and clinical initiatives targeting potential perpetrators. At this time, educational efforts concerning this phenomenon have focused largely on stopping underaged sexting, and the onus has been placed within these efforts on women and girls to prevent their own victimization (Zauner, 2019). In doing so, these programs carry an element of blame for women and girls who consensually explore their sexuality using images, and ultimately lose control of how those images are used, while simultaneously ignoring perpetrator responsibility. Programs going forward should be designed to target the behavior of the perpetrator rather than the victim, both for changing that behavior and emphasizing that it is the problem at hand (not the creation

of consensual or personal sexual images by choice). One way of doing this could include emphasizing the humanness of the victim or potential victim at multiple stages of the process. Specifically, this could include teaching that she has a right to create consensual imagery as part of her inherent human autonomy, and that she remains a full human entity worthy of dignity and respect even as those images are used beyond the range of her original consent and intentions.

Also covered in the discussion in Chapter 2 is the idea that interventions could employ bystanders in the form of male peers in order to change male culture around sexual aggression. Conversely, peer culture also offers the potential for escalation when groups hold toxic norms and values, for which applications and interventions may be more urgently needed. This is especially important to take into account when understanding online sexual aggression, as the process of image-based and technology-facilitated sexual aggression do not occur in a vacuum in these cyber spaces. They are arguably a part of a broader and more disturbing emerging online pattern of behavior embodied in what has been called the “manosphere” (Ging, 2017; Gotell & Dutton, 2016). This term collectively refers to a range of online sub-groups (e.g. men’s rights organizations, pickup artists, incels, “tradcons,” etc.) with the common thread of overt sexism and a particular form of antifeminism based in the “red-pill philosophy.” This topic is timely, and has been examined in the press, particularly since the

2014 massacre committed by Elliot Rodger in Isla Vista, a figure who has since become something of a hero within these groups.

The “manosphere” has been broadly looked at in some recent qualitative academic work (Ging, 2017; Gotell & Dutton, 2016), but has yet to be examined in depth with quantitative designs. Intuitively, these groups act to silence and control women and may have a range of other consequences, but these effects require investigation in order to argue more effectively for some form of (legal, cultural) regulation, and some work to this effect is now in progress (Bevens & Sczesny, 2019)⁴¹. Thus, the manner in which sexual aggression fits into this broader pattern of online sexism offers both future directions for study and applications, and a framework for understanding the cross-over between online and offline hate directed at women.

Conclusions

Men’s sexual aggression against women is an ongoing and global problem (Garcia-Moreno, et al., 2006; Smith et al., 2017), which is increasingly being recognized as such in the #MeToo era. Although etiological theories continue to vary and evolve, it is generally agreed that male sexual aggression can be conceptualized as a wide continuum of behaviors, and the range of attempts to date at measuring this construct reflect its heterogeneous nature.

⁴¹ This work also looks at feminist identity as a potential buffer to women’s negative outcomes associated with exposure to men’s sexist online behavior. In line with this, future work employing the intrusive behavior paradigm could benefit from including feminist identity as an important variable—we would expect that both men and women who identify strongly with feminism would be less likely to engage in surveillance and endorse sexually aggressive attitudes and beliefs. Alternatively, men who tout themselves as feminists in what can be characterized as a performative way may see endorsement of feminism as a “free pass” to engage in problematic behavior because they don’t (consciously or unconsciously) believe that they are part of the problem.

Additionally, acknowledgment of ever-evolving and varied manifestations of sexual aggression, largely in response to modern technological tools being put to use for perpetration, is growing along with scholarly interest in the area. Across five empirical chapters, this thesis has contributed to our understanding of the problem of sexual aggression in two ways: through examining the potential role of dehumanization and objectification as predictors, and through the development of the intrusive behavior paradigm. We also situated these aims within the two broader literature fields of sexual aggression (drawn not only from psychology, but also law and feminist perspectives), and dehumanization and objectification.

Hypotheses regarding the first of these aims were partially supported: when a woman is viewed in everyday attire (Chapter 2) or depicted realistically (Chapters 5 & 6), men are unlikely to dehumanize her or indeed see her as a potential victim of sexual aggression. However, when depicted in sexualized attire and with minimal personalizing information, men are more likely to engage in animalistic dehumanization of that woman and see her as a potential victim (Chapter 2). The importance of personalizing information seems to underpin this correlational relationship. Our second aim was fully successful, with the development of the intrusive behavior paradigm. This has the potential for use in measuring both general sexual aggression tendencies, and specific online manifestations thereof. It is the first behavioral measure of its kind and opens up a range of promising avenues for further exploration.

As a whole, this thesis represents an initial step towards improving empirical measurement, and in turn, our broad understanding of men's sexual aggression against women. In addition, this thesis provides novel information about when dehumanization plays a role in these behaviors, and points to future directions that include some hope for women taking back control of their own images, both literally and figuratively.

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Appendix A

Study 1 Compiled Measures

PARTICIPANT INFORMATION SHEET

MEN'S ATTITUDES AND EXPERIENCES

The effect of men's attitudes in relationship to women

INVITATION

You are being asked to take part in a research study on how men think about women and girls. This study aims to help in bettering our understanding of how men feel about women and sexuality. My name is Casey Bevens, and I am a PhD student working under the supervision of Dr. Steve Loughnan. This study will be the first of several that will make up my PhD, and is somewhat exploratory, in that we want to establish how men think about certain issues surrounding sex and women. The Psychology Research Ethics Committee has approved this study.

WHAT WILL HAPPEN

In this study, you will be asked to respond to a series of questionnaire measures online. Specifically, these will ask about your feeling on a range of topics related to women and sexuality, including aggressive and non-aggressive sexuality. We will also ask about your own sex life.

TIME COMMITMENT

The study typically takes about fifteen minutes.

PARTICIPANTS' RIGHTS

You may decide to stop being a part of the research study at any time without explanation or penalty. You have the right to ask that any data you have supplied to that point be withdrawn/destroyed. You will still be paid for your contribution.

You have the right to omit or refuse to answer or respond to any question that is asked of you.

You have the right to have your questions about the procedures answered (unless answering these questions would interfere with the study's outcome). If you have any questions as a result of reading this information sheet, you should ask the researcher before the study begins.

BENEFITS AND RISKS

Benefits of participating in this study include the chance to help further the understanding of human sexuality, and the payment you will receive. There

are no known major risks of participating in this study, although the subject matter includes sensitive and personal topics that have the potential to make some people uncomfortable.

COST, REIMBURSEMENT AND COMPENSATION

Your participation in this study is voluntary. You will receive 1.5 pounds in return for your participation.

CONFIDENTIALITY/ANONYMITY

The data we collect do not contain any personal information about you. No one will link the data you provided to identifying information.

FOR FURTHER INFORMATION

Casey Bevens will be glad to answer your questions about this study at any time. You may contact her at 44 7802 487878 or s1618394@sms.ed.ac.uk. If you want to find out about the final results of this study, you should contact Casey Bevens in one of these ways.

[Page break]

You are being asked to consent to participation in a study about men's attitudes about women, girls, and sex. This study will ask about your feeling on a range of topics related to women and sexuality, including aggressive and non-aggressive sexuality. We will also ask about your own sex life.

By clicking continue below, you are agreeing that: (1) you have read and understood the Participant Information Sheet, (2) questions about your participation in this study have been answered satisfactorily, (3) you are aware of the potential risks (if any), (4) you are taking part in this research study voluntarily (without coercion), and (5) anonymised data only may be shared in public research repositories.

Modified Self-Objectification Questionnaire, or Other-Objectification Questionnaire (OOQ; Strelan & Hargreaves, 2005)

“This section is concerned with how people think about women's bodies. Listed below are 10 different body attributes. When you think about, or look at women in general, which of these body attributes do you think is most important? For the bodies of women, I would like you to rank the attributes in order from what you think is most important to what you think is least important.”

“Please consider all the attributes simultaneously and record your answers by dragging the items into order in the column to the right.

Remember, 1= most important, 2= next most important... 10= least important.”

Attributes:

- Physical Coordination
- Health
- Weight
- Strength
- Sex Appeal
- Physical Attractiveness
- Energy Level (e.g. Stamina)
- Firm/Sculpted Muscles
- Physical Fitness Level
- Measurements (e.g. Chest, Waist, Hips)



Image Used for reference with the following scales

Ratings of warmth, competence, morality, scaled from 1 (*Not at all*)- 7 (*Very much so*), Leach et al. (2007):

“Rate the extent to which the person above is:”

- Honest
- Sincere
- Trustworthy
- Likeable
- Warm
- Friendly
- Competent
- Intelligent
- Skilled

Ratings of human nature and human uniqueness, scaled from 1 (*Not at all*) to 7 (*Very much so*), Bastian, et al. (2012):

“Rate the extent to which the person above:”

Human Nature items:

- Is open minded and can think clearly about things
- Is emotional, responsive, and warm
- *Is mechanical and cold, like a robot
- *Is superficial and has no depth

Human Uniqueness items:

- Is refined and cultured
- Is rational, logical, and intelligent
- *Lacks self-restraint, like an animal
- *Is unsophisticated

*Reverse scored

Likelihood to Sexually Harass Scale (Pryor, 1998)- Shortened version

“On the sheets that follow you will find 5 brief scenarios that describe 5 different interactions between males and females. In each case you will be asked to imagine that you are the main male character in the scenario. Then you will be asked to rate how likely it is that you would perform each of several different behaviors in the described social context. Assume in each scenario that no matter what you choose to do, nothing bad would be likely to happen to you as result of your action. Try to answer each question as honestly as you can. Your answers will be completely anonymous. No one will ever try to discover your identity, no matter what you say on the questionnaire”. (Scaled from 1, *Not at all likely*- 5, *Very Likely*)

“Imagine that you are the manager of a shipping company. One day your supervisor asks you to study the possibility of buying several computers for the office. You call up several competing companies that sell computers. Each company sends a sales representative over to your office who describes the company's products. A salesperson from company "A" calls you and asks to come to your office. You agree, and the next day a very attractive woman shows up. She can offer no real reason for buying her company's products over those of the other companies. However, she seems very sexy. How likely are you to do the following things in this situation?”

- Would you recommend her line of computers?
- Assuming that you are secure enough in your job that no possible reprisals could happen to you, would you agree to recommend her line of computers in exchange for sexual favors?
- Given the same assumptions as the last question above, would you ask her to meet you later for dinner to discuss the choice of computers?

“Imagine that you are a Hollywood film director. You are casting for a minor role in a film you are planning. The role calls for a particularly stunning actress, one with a lot of sex appeal. How likely are you to do the following things in this situation?”

- Would you give the role to the actress whom you personally found sexiest?
- Would give the role to an actress who agreed to have sex with you?
- Would you ask the actress to whom you were most personally attracted to talk with you about the role over dinner?

"Imagine that you are the owner of a modeling agency. Your agency specializes in sexy female models used in television commercials. One of your models, Amy T., is a particularly ravishing brunette. You stop her after work one day and ask her to have dinner with you. She coldly declines your offer and tells you that she would like to keep your relationship with her "strictly business." A few months later you find that business is slack, and you have to lay off some of your employees. You can choose to lay off Amy or one of four other women. All are good models, but someone has to go. How likely are you to do the following things in this situation?"

- Would you fire Amy?
- Assuming that you are unafraid of possible reprisals, would you offer to let Amy keep her job in return for sexual favors?
- Would you ask Amy to dinner so that you could talk over her future employment?

"Imagine that you are the editor for a major publishing company. It is your job to read new manuscripts of novels and decide whether they are worthy of publication. You receive literally hundreds of manuscripts per week from aspiring novelists. Most of them are screened by your subordinates and thrown in the trash. You end up accepting about one in a thousand for publication. One night you go to a party. There you meet a very attractive woman named Betsy. Betsy tells you that she has written a novel and would like to check into getting it published. This is her first novel. She is a dental assistant. She asks you to read her novel. How likely are you to do the following things in this situation?"

- Would you agree to read Betsy's novel?
- Would you agree to read Betsy's novel in exchange for sexual favors?
- Would you ask Betsy to have dinner with you the next night to discuss your reading her novel?

"Imagine that you are the news director for a local television station. Due to some personnel changes you have to replace the anchor woman for the evening news. Your policy has always been to promote reporters from within your organization when an anchor woman vacancy occurs. There are several female reporters from which to choose. All are young, attractive, and apparently qualified for the job. One reporter, Loretta W., is someone whom you personally find very sexy. You initially hired her, giving her a first break in the TV news business. How likely are you to do the following things in this situation?"

- Would you give Loretta the job?
- Assuming that you fear no reprisals in your job, would you offer Loretta the job in exchange for sexual favors?
- Assuming that you fear no reprisals in your job, would you ask her to meet you after work for dinner to discuss the job?

Attraction to Sexual Aggression Inventory, Rape Proclivity sub-scale
(Malamuth, 1989
(Scale from 1- 5)

“People frequently think about different activities even if they never do them. For each kind of activity listed, please indicate whether or not you have ever thought of trying that activity according to the scale given.” (Scale: 1, *Have never thought of it*- 5, *Have very frequently thought of it*)

- Rape
- Forcing a female to do something sexual she didn't want to do

Whether or not you have ever thought of it, do you find the idea:
(Scale: 1, *Very Unattractive*- 5, *Very Attractive*)

- 3. Rape
- 4. Forcing a female to do something sexual she didn't want to do

What percentage of *males* do you think would find the following activities sexually arousing?

(Scale: 1, *Less than 20%*- 5, *Between 80% and 100%*)

- 5. Rape
- 6. Forcing a female to do something sexual she didn't want to do

What percentage of *females* do you think would find the following activities sexually arousing?

(Scale: 1, *Less than 20%*- 5, *Between 80% and 100%*)

- 7. Rape
- 8. Being forced to do something sexual they didn't want to do
- Forcing a male to do something sexual he didn't want to do

How sexually arousing do you think you would find the following sexual activities if you engaged in them (even if you have never engaged in them)?

(Scale: 1, *Very Un-arousing* – 5, *Very arousing*)

- Rape
- Forcing a female to do something sexual she didn't want to do
- Being forced to do something sexual you didn't want to do

If you could be assured that no one would know and that you could in no way be punished for engaging in the following acts, how likely, if at all, would you be to commit such acts?

(Scale: 1, *Not at all likely*- 5, *Certainly likely*)

- 13. Rape
- 14. Forcing a female to do something sexual she didn't want to do

Attitudes Towards Rape Victims Scale (Ward, 1988)

"For the following items, please indicate the extent to which you agree or disagree with each statement:" (Scale: 1, *Disagree strongly*- 5, *Agree strongly*)

- A raped woman is a less desirable woman.
- The extent of the woman's resistance should be the major factor in determining if a rape has
- occurred.
- * A raped woman is usually an innocent victim.
- Women often claim rape to protect their reputations.
- *"Good" girls are as likely to be raped as "bad" girls.
- Women who have had prior sexual relationships should not complain about rape.
- *Women do not provoke rape by their appearance or behavior.
- Intoxicated women are usually willing to have sex.
- It would do some women good to be raped.
- *Even women who feel guilty about engaging in premarital sex are not likely to claim rape
- falsely.
- Most women secretly desire to be raped.
- *Any female may be raped.
- Women who are raped while accepting rides from strangers get what they deserve.
- Many women invent rape stories if they learn they are pregnant.
- *Men, not women, are responsible for rape.
- A woman who goes out alone at night puts herself in a position to be raped.
- Many women claim rape if they have consented to sexual relations but have changed their minds afterwards.
- Accusations of rape by bar girls, dance hostesses and prostitutes should be viewed with
- suspicion.
- *A woman should not blame herself for rape.
- A healthy woman can successfully resist a rapist if she really tries.
- Many women who report rape are lying because they are angry or want revenge on the
- accused.
- *Women who wear short skirts or tight blouses are not inviting rape.
- Women put themselves in situations in which they are likely to be sexually assaulted because
- they have an unconscious wish to be raped.
- Sexually experienced women are not really damaged by rape.
- In most cases when a woman was raped, she deserved it.

* Reverse scored.

Ambivalent Sexism Inventory (Glick & Fiske, 1996)
Hostile and Benevolent Sexism sub-scales

"Below is a series of statements concerning men and women and their relationships in contemporary society. Please indicate the degree to which you agree or disagree with each statement using the scale indicated." (Scale: 1, *Disagree Strongly*- 6, *Agree Strongly*).

- No matter how accomplished he is, a man is not truly complete as a person unless he has the love of a woman. (B)
- Many women are actually seeking special favors, such as hiring policies that favor them over men, under the guise of asking for "equality." (H)
- *In a disaster, women ought not necessarily be rescued before men. (B)
- Most women interpret innocent remarks or acts as being sexist. (H)
- Women are too easily offended. (H)
- *People are often truly happy in life without being romantically involved with a member of the other sex. (B)
- *Feminists are not seeking for women to have more power than men. (H)
- Many women have a quality of purity that few men possess. (B)
- Women should be cherished and protected by men. (B)
- Most women fail to appreciate fully all that men do for them. (H)
- Women seek to gain power by getting control over men. (H)
- Every man ought to have a woman whom he adores. (B)
- *Men are complete without women. (B)
- Women exaggerate problems they have at work. (H)
- Once a woman gets a man to commit to her, she usually tries to put him on a tight leash. (H)
- When women lose to men in a fair competition, they typically complain about being discriminated against. (H)
- A good woman should be set on a pedestal by her man. (B)
- *There are actually very few women who get a kick out of teasing men by seeming sexually available and then refusing male advances. (H)
- Women, compared to men, tend to have a superior moral sensibility. (B)
- Men should be willing to sacrifice their own well-being in order to provide financially for the women in their lives. (B)
- *Feminists are making entirely reasonable demands of men. (H)
- Women, as compared to men, tend to have a more refined sense of culture and good taste. (B)

*Reverse scored

Masculinity Contingency Scale, threat-sub-scale (Burkley, et al., 2016)

“Please indicate the extent to which you agree or disagree with each of the following statements:” (Scale: 1, *Strongly disagree* – 5, *Strongly agree*).

- I can't respect myself if I don't live up to what it means to be a “real man.”
- My self-respect would be threatened if I didn't consider myself macho.
- My self-worth suffers if I think my manhood is lacking.
- I can't respect myself if I don't behave like a “real man.”
- I would feel worthless if I acted like “less than a man”

Conformity to Masculine Norms Inventory:

Risk-taking sub-scale (R), Violence sub-scale (V), Power over women sub-scale (POW), and Playboy (P) sub-scale, Parent and Moradi (2011)

"The following section contains a series of statements about how men might think, feel or behave. The statements are designed to measure attitudes, beliefs, and behaviors associated with both traditional and non-traditional masculine gender roles. Thinking about your own actions, feelings and beliefs, please indicate how much you personally agree or disagree with each statement based on the scale indicated. There are no right or wrong responses to the statements. You should give the responses that most accurately describe your personal actions, feelings and beliefs. It is best if you respond with your first impression when answering." (Scale 1, *Strongly Disagree*- 4, *Strongly agree*)

- If I could, I would frequently change sexual partners (P)
- *I believe that violence is never justified (V)
- *In general, I do not like risky situations (R)
- I enjoy taking risks (R)
- *I am disgusted by any type of violence (V)
- *I would only have sex if I was in a committed relationship (P)
- I take risks (R)
- Sometimes violent action is necessary (V)
- In general, I control the women in my life (POW)
- I would feel good if I had many sexual partners (P)
- I frequently put myself in risky situations (R)
- Women should be subservient to men (POW)
- I am willing to get into a physical fight if necessary (V)
- *Violence is almost never justified (V)
- I am happiest when I'm risking danger (R)
- It would be enjoyable to date more than one person at a time (P)
- *No matter what the situation I would never act violently (V)
- Things tend to be better when men are in charge (POW)
- I love it when men are in charge of women (POW)

*Reverse scored

Short Dark Triad Scale, psychopathy and narcissism sub-scales (Jones & Paulhus, 2014)

(Scale: 1, *Disagree strongly* -5, *agree strongly*)

“Please indicate how much you agree with each of these statements:”

Psychopathy Sub-Scale Items:

- I like to get revenge on authorities.
- *I avoid dangerous situations.
- Payback needs to be quick and nasty.
- People often say I’m out of control.
- It’s true that I can be mean to others.
- People who mess with me always regret it.
- *I have never gotten into trouble with the law.
- I enjoy having sex with people I hardly know
- I’ll say anything to get what I want.

Narcissistic Sub-Scale Items:

- People see me as a natural leader.
- *I hate being the center of attention.
- Many group activities tend to be dull without me.
- I know that I am special because everyone keeps telling me so.
- I like to get acquainted with important people.
- *I feel embarrassed if someone compliments me.
- I have been compared to famous people.
- *I am an average person.
- I insist on getting the respect I deserve.

*Reverse scored

Physical Aggression Scale (Wrench, 2002)

“Read the following questions and select the answer that corresponds with what you would do in most situations. Do not be concerned if some of the items appear similar. Please use the scale below to rate the degree to which each statement applies to you.”

(Scale: 1, *Strongly Disagree*- 5, *Strongly Agree*)

- *I am extremely careful to avoid physically attacking another individual.
- When I get upset, I have a tendency to throw objects.
- When I get angry, I tend to hit inanimate objects.
- *I would never use physical violence to solve a problem.
- When I get mad, I tend to hit things.
- I have physically confronted someone.
- I use physical violence as a way to control others.
- *I avoid physical violence at all costs.
- I get respect by physically intimidating others.
- *I would never be involved in a physical confrontation.
- I have broken inanimate objects during a fit of rage.
- *I tend to flee from physical confrontations.
- When losing an argument, I always resort to physical violence.
- I hit walls as a means of dealing with my anger.
- Physically hurting others helps me accomplish my goals.

*Reverse scored

Questions concerning sexual promiscuity

- How many sexual partners have you had in the past twelve months?
- How many sexual partners have you had since age 14?

MIDSA sexual sadism scale (Knight, Prentky, & Cerce, 1994)

"Please indicate the extent to which you agree with each statement below on the scale indicated."

Sadistic Fantasies Sub-scale items:

(Scale: 1, *Have never thought of it*; 5, *Have very frequently thought of it*)

- When I have had sexual thoughts, I have thought of cutting a woman or girl with a knife.
- I have thought about burning someone during sex.
- I have thought about killing someone during sex.
- I have thought about strangling a woman or girl during sex.
- I have had sexual thoughts about tying my partner to a bed, legs and arms spread apart.
- I have thought about embarrassing or humiliating a woman or girl during sex.
- When I have had sexual thoughts, I thought about threatening or frightening a woman or girl.

Sadistic Behaviors Sub-scale:

(Scale: 1, *Have never done this*; 5, *Almost always do this*)

- While having sex, I have used handcuffs, whips, or leathers.
- I have tied someone up while we were having sex.
- I have beaten a woman or girl while I was having sex with her.
- I have purposely hurt a woman or girl physically during sex.
- While having sex I have enjoyed scaring my companion so that she begged me to stop.
- I have daydreamed about how good it would feel to hurt someone during sex.
- It turns me on to think about overpowering someone sexually.
- The more scared a person becomes, the more sexually turned on I get.

Study 1 Debrief

Thank you for taking the time to complete this study. There exists a growing area of research in psychology concerning the objectification of women and its consequences. The current study aims to help better our understanding of men's attitudes about sexualized women and girls and examines the possibility that aggression may be related to objectifying attitudes.

There exists variability among men in how they respond to the items you saw today, and we do not assume that men in general endorse aggressive behaviors and attitudes. Your participation today will contribute to the literature illuminating individual differences in tendencies both towards and against aggression. Please be assured again that all responses you have given today are completely anonymous, and that the researchers have no way of linking them to you at any time.

If you have any questions about the research project, please contact Casey Bevens at s1618394@sms.ed.ac.uk or 44 7802 487878. Thank you again for your time and effort, and for your contribution to this project.

Study 1 Additional Analyses

For the purposes of these analyses, some transformations were applied to the variables in an attempt to be more robust. For the OOQ, 25 was added to all scores to create a positive number, before log transforming to reduced statistical skew. All mean scores for Morality, Warmth, Competence, Human Nature, and Human Uniqueness scales were also log transformed for this reason. Human Nature and Human Uniqueness were combined into a single variable of Humanness due to their high correlation ($r = .70$). All outcome measures and individual differences measures were also log-transformed to address skew, and bootstrapping was used where appropriate. Please note that all results presented here should be interpreted with caution due to low statistical power, however, they do represent a similar pattern to those main results presented in Study 1.

Pearson's correlations and descriptive statistics were computed for all measures, and these can be found in Table A1 (or Table S15 online <https://osf.io/s6p3k/>), in relation to the primary variables of interest.

Additional correlations among the individual differences variables can be found in Table A2, or online (or see Table S4 <https://osf.io/yg9sc/>). The correlations from Table A1 were used in determining variables to enter into hierarchical regression models for the three outcome variables of primary interest: the ASAI, ARVS, and LSH. In addition, these correlations led us to examine hostile sexism as a fourth outcome variable. Specifically, we sought

to first test the relative contributions of the SOQ, Humanness, Morality, Warmth, and Competence to the sexual aggression measures, and thus conducted an initial hierarchical regression involving these scales for each sexual aggression outcome of interest. This was followed by regressions testing the retained variables against individual differences that showed significant correlations with each of the outcomes.

Table A1.
Correlations Among Log Transformed Variables & Descriptive Statistics
(Study 1)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | N | M(SD) |
|---|---------|---------|---------|---------|---------|--------|--------|--------|-----|-----------|
| <u>Main Variables</u> | | | | | | | | | | |
| 1. Objectification | 1 | | | | | | | | 177 | 1.26(.24) |
| 2. Humanness | .001 | 1 | | | | | | | 189 | 0.69(.08) |
| 3. Morality | -.005 | .631** | 1 | | | | | | 190 | 0.66(.10) |
| 4. Warmth | -.088 | .602** | .763** | 1 | | | | | 190 | 0.70(.10) |
| 5. Competence | -.095 | .682** | .746** | .658** | 1 | | | | 188 | 0.67(.10) |
| 6. LSH | -.143 | -.100 | .000 | .016 | .000 | 1 | | | 190 | 0.87(.21) |
| 7. ASAI | -.215** | -.246** | -.102 | -.165* | -.070 | .404** | 1 | | 188 | 0.11(.12) |
| 8. ARVS | -.089 | -.236** | -.146* | -.092 | -.129 | .462** | .385** | 1 | 190 | 1.60(.14) |
| <u>Individual Differences Variables</u> | | | | | | | | | | |
| Narcissism | .021 | -.184 | -.248* | -.157 | -.238* | .260* | .260* | .341** | 83 | 0.36(.13) |
| Psychopathy | -.127 | -.071 | -.084 | .012 | -.118 | .492** | .329** | .440** | 94 | 0.32(.13) |
| Physical Aggression | -.032 | -.098 | -.126 | -.066 | -.101 | .443** | .294** | .420** | 94 | 0.25(.14) |
| Sadistic Fantasy | .018 | -.107 | -.208* | -.191 | -.130 | .338** | .222* | .198 | 93 | 0.11(.11) |
| Sadistic Behavior | -.058 | -.051 | -.072 | -.109 | -.080 | .247* | .164 | .159 | 94 | 0.09(.11) |
| Overall Sadism | -.025 | -.079 | -.145 | -.152 | -.107 | .304** | .200 | .185 | 94 | 0.10(.11) |
| Benevolent Sexism | -.075 | -.092 | .058 | .126 | .064 | .227* | .196 | .266** | 95 | 0.50(.15) |
| Hostile Sexism | -.094 | -.464** | -.330** | -.224* | -.276** | .325** | .319** | .614** | 95 | 0.45(.19) |
| Overall Sexism | -.116 | -.351* | -.184 | -.079 | -.141 | .330** | .294** | .526** | 95 | 0.48(.14) |
| Masculine Contingency | -.208 | -.280** | -.100 | -.011 | -.160 | .356** | .165 | .448** | 92 | 0.30(.20) |
| Masculine Norm: Risk | -.023 | -.194 | -.136 | -.173 | -.123 | .275** | .194 | .377** | 95 | 0.32(.13) |
| Masculine Norm: Violence | -.065 | -.184 | -.290** | -.275** | -.266** | .257** | .141 | .365** | 95 | 0.37(.09) |
| Masculine Norm: Power | -.058 | -.345** | -.151 | -.097 | -.162 | .421** | .366** | .605** | 95 | 0.19(.15) |
| Masculine Norm: Playboy | -.112 | .021 | .099 | .123 | .137 | .456** | .229* | .265** | 95 | 0.34(.14) |
| Overall Masculine Norms | -.122 | -.234* | -.179 | -.165 | -.144 | .478** | .320** | .556** | 95 | 0.33(.08) |
| Promiscuity 1 | .089 | -.122 | -.119 | -.185 | -.215 | .067 | .144 | .154 | 73 | 0.10(.22) |
| Promiscuity 2 | -.026 | .040 | .080 | .022 | -.019 | -.097 | .049 | -.116 | 86 | 0.78(.45) |

Note. * $p < 0.05$, two-tailed. ** $p < 0.01$, two tailed. LSH = Likelihood to Sexually Harass; ASAI = Attraction to Sexual Aggression Inventory; ARVS = Attitudes Towards Rape Victims Scale.

Table A2.

*Correlations Among Log Transformed Individual Differences Variables
(Study 1)*

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1. Narcissism | 1 | | | | | | | |
| 2. Psychopathy | .286* | 1 | | | | | | |
| 3. Physical Aggression | .166 | .585** | 1 | | | | | |
| 4. Sadistic Fantasy | .272* | .306** | .207* | 1 | | | | |
| 5. Sadistic Behavior | .230* | .187 | .048 | .808** | 1 | | | |
| 6. Overall Sadism | .265* | .255* | .124 | .946** | .954** | 1 | | |
| 7. Benevolent Sexism | - | - | - | - | - | - | 1 | |
| 8. Hostile Sexism | - | - | - | - | - | - | .448** | 1 |
| 9. Overall Sexism | - | - | - | - | - | - | .839** | .854** |
| | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| 10. Masculine Contingency | 1 | | | | | | | |
| 11. Masculine Norm: Risk | .270** | 1 | | | | | | |
| 12. Masculine Norm: Violence | .260* | .375** | 1 | | | | | |
| 13. Masculine Norm: Power | .478** | .419** | .289** | 1 | | | | |
| 14. Masculine Norm: Playboy | .059 | .404** | .241* | .266** | 1 | | | |
| 15. Overall Masculine Norms | .343** | .777** | .707** | .636** | .688** | 1 | | |
| 16. Promiscuity 1 | -.023 | .330** | .328** | .169 | .315** | .415** | 1 | |
| 17. Promiscuity 2 | -.083 | .099 | .046 | -.092 | .083 | .048 | .354** | 1 |

Note. * $p < 0.05$, two-tailed. ** $p < 0.01$, two tailed. Dashes indicate cases where correlations could not be computed because one of the variables was constant.

ASAI.

For the ASAI, the SOQ and Humanness were significantly negatively correlated and most theoretically relevant, so these were entered in Step 1, followed by Warmth, Competence, and Morality in Step 2. In Step 1 (Adjusted $R^2 = .110$), both the SOQ ($b = -.108$, $SE = .036$, $\beta = -.214$, $p = .002$) and Humanness ($b = -.368$, $SE = .121$, $\beta = -.255$, $p = .004$) were retained as significant predictors. In Step 2 (Adjusted $R^2 = .116$), only the SOQ was retained ($b = -.107$, $SE = .037$, $\beta = -.212$, $p = .004$), although Humanness was approaching significance ($b = -.485$, $SE = .260$, $\beta = -.336$, $p = .073$). These models can be found in Table A3 (or in the online materials as Table S1 <https://osf.io/yg9sc/>). Because the variance accounted for in the second model was not significantly greater than that in model 1 (Δ significance of $R^2 = .109$), both the Objectification and Humanness were retained in the following regressions, despite Humanness's contribution becoming non-significant in Step 2 here.

Further regressions were run next, where for Step 1 the SOQ and Humanness were entered, and in Step 2 individual differences variables that were correlated with the ASAI were entered individually. These results can be found in Table A4 (or online as Table S16 <https://osf.io/s6p3k/>), and show that in Step 2 of each regression model, the SOQ was retained when tested against narcissism ($p = .028$), psychopathy ($p = .026$), physical aggression ($p = .009$), and sadistic fantasy ($p = .018$). The SOQ was the only significant predictor retained in the latter two of these models. Humanness was retained

in Step 2 in models testing against the overall ASI ($p = .039$), CMNI-power sub-scale ($p = .045$), CMNI-Playboy sub-scale ($p = .008$), and overall CMNI ($p = .035$). In the case of the CMNI-power and overall ASI, Humanness was retained as the only significant predictor in Step 2. Only when hostile sexism was added as an individual difference variable was neither the SOQ or Humanness retained. So, in general, either objectification or Humanness significantly predicted attraction to sexual aggression when controlling for the range of individual differences factors that also correlate with that outcome.

Table A3.

Linear Model of Primary Predictors of Attraction to Sexual Aggression

| | <i>b</i> | <i>SE B</i> | β | <i>p</i> |
|-----------------|----------------------------|-------------|---------|----------|
| <u>Step 1</u> | | | | |
| Constant | 0.499 (0.316, 0.725) | 0.103 | | .001 |
| Humanness | -0.368 (-0.647, -0.154) | 0.121 | -.255 | .004 |
| Objectification | -0.108 (-0.173, -0.037) | 0.036 | -.214 | .002 |
| <u>Step 2</u> | | | | |
| Constant | 0.505 (0.316, 0.717) | 0.099 | | .001 |
| Humanness | -0.485 (-1.038, 0.008) | 0.260 | -.336 | .073 |
| Objectification | -0.107 (-0.172, -0.030) | 0.037 | -.212 | .004 |
| Morality | 0.175 (-0.191, 0.555) | 0.199 | .143 | .399 |
| Warmth | -0.262 (-0.531, 0.052) | 0.158 | -.213 | .090 |
| Competence | 0.209 (-0.172, 0.567) | 0.185 | .170 | .249 |

Note. *Adjusted R*² = .110 for Step 1; *Adjusted R*² = .116 for Step 2. Δ Significance = .109
 95% bias corrected and accelerated confidence intervals reported in parentheses.
 Confidence intervals and standard errors based on 1000 bootstrap samples.

Table A4.

Linear Model of Primary and Individual Difference Predictors of Attraction to Sexual Aggression

| <i>Individual Difference Variable Tested</i> | <i>Coefficients of Significance Step 1(SOQ & Humanness entered)</i> | <i>Coefficients of significance, Step 2</i> | <i>Adjusted R² Step 1</i> | <i>Adjusted R² Step 2</i> | <i>Δ Significance</i> |
|--|---|---|--|--|-----------------------|
| Narcissism | SOQ ($p = .032$) | SOQ ($p = .028$) | .091 | .141 | .027* |
| Psychopathy | SOQ ($p = .009$) | Narcissism ($p = .025$) SOQ ($p = .019$) | .086 | .165 | .004* |
| Physical Aggression | SOQ ($p = .006$) | Psychopathy ($p = .026$) SOQ ($p = .009$) | .086 | .142 | .014* |
| Sadistic Fantasy | SOQ ($p = .014$) | SOQ ($p = .018$) | .092 | .111 | .102 |
| Hostile Sexism | Humanness ($p = .007$) | Hostile Sexism ($p = .043$) | .102 | .124 | .078 |
| Overall Sexism | Humanness ($p = .007$) | Humanness ($p = .039$) | .102 | .119 | .103 |
| Masculine Norm: Power | Humanness ($p = .012$) | Humanness ($p = .045$) | .102 | .151 | .016* |
| Masculine Norm: Playboy | Humanness ($p = .008$) | Humanness ($p = .008$) CMNI Playboy ($p = .040$) | .102 | .138 | .035* |
| Overall Masculine Norms | Humanness ($p = .011$) | Humanness ($p = .035$) CMNI Overall ($p = .024$) | .102 | .154 | .014* |

Note. All coefficient p values based on 1000 bootstrap samples.

ARVS.

The ARVS was negatively correlated with Humanness, and this was entered in the first step of the initial hierarchical regression (Adjusted $R^2 = .049$), followed by the SOQ, Morality, Warmth, and Competence in Step 2 (Adjusted $R^2 = .038$). Humanness was the only significant predictor in both Step 1 ($b = -.400$, $SE = 0.114$, $\beta = -.234$, $p = .002$) and Step 2 ($b = -.511$, $SE = .193$, $\beta = -.299$, $p = .013$). Results for these models can be found in Table A5 (or online as Table S2, <https://osf.io/yg9sc/>). As Step 2 did not improve the amount of variance accounted for, and no further predictors contributed significantly to the model, Humanness alone was retained to test against the significantly correlated individual differences variables. The results of these regressions can be found in Table A6 (or in Table S17 online <https://osf.io/s6p3k/>), and show that Humanness was retained in Step 2 when tested against psychopathy ($p = .023$), physical aggression ($p = .032$), benevolent sexism ($p = .015$), the CMNI-risk sub-scale ($p = .047$), the CMNI-violence sub-scale ($p = .049$), and the CMNI-playboy sub-scale ($p = .005$). However, Humanness was not retained in Step 2 of the models testing against narcissism, hostile sexism, the overall ASI, the MCS, the CMNI-power sub-scale, or the overall CMNI. So, Humanness continued to contribute significantly in half the models controlling for the individual differences on the ARVS.

Table A5.

Linear Model of Predictors of Unfavorable Attitudes Towards Rape Victims

| | <i>b</i> | <i>SE B</i> | β | <i>p</i> |
|-----------------|----------------------------|-------------|---------|----------|
| <u>Step 1</u> | | | | |
| Constant | 1.870 (1.708, 2.012) | 0.080 | | .001 |
| Humanness | -0.400 (-0.602, -0.166) | 0.114 | -.234 | .002 |
| <u>Step 2</u> | | | | |
| Constant | 1.887 (1.675, 2.069) | 0.198 | | .001 |
| Humanness | -0.511 (-0.878, -0.111) | 0.193 | -.299 | .013 |
| Objectification | -0.036 (-0.128, 0.046) | 0.044 | -.061 | .401 |
| Morality | 0.014 (-0.411, 0.452) | 0.211 | .010 | .952 |
| Warmth | 0.130 (-0.264, 0.567) | 0.207 | .090 | .523 |
| Competence | 0.007 (-0.344, 0.442) | 0.202 | .005 | .970 |

Note. Adjusted $R^2 = .049$ for Step 1; Adjusted $R^2 = .038$ for Step 2.

95% bias corrected and accelerated confidence intervals reported in parentheses.

Confidence intervals and standard errors based on 1000 bootstrap samples.

Table A6.

Linear Model of Primary and Individual Difference Predictors of Unfavorable Attitudes Towards Rape Victims

| <i>Individual Difference Variable Tested</i> | <i>Significance of Humanness Step 1</i> | <i>Coefficients of significance, Step 2</i> | <i>Adjusted R² Step 1</i> | <i>Adjusted R² Step 2</i> | <i>Δ Significance</i> |
|--|---|--|--|--|-----------------------|
| Narcissism | Humanness ($p = .041$) | Narcissism ($p = .001$) | .035 | .119 | .004* |
| Psychopathy | Humanness ($p = .013$) | Humanness ($p = .023$) Psychopathy ($p = .001$) | .039 | .212 | <.001** |
| Physical Aggression | Humanness ($p = .018$) | Humanness ($p = .032$) Physical Aggression ($p = .001$) | .039 | .191 | <.001** |
| Benevolent Sexism | Humanness ($p = .011$) | Humanness ($p = .015$) Benevolent Sexism ($p = .017$) | .054 | .088 | .037* |
| Hostile Sexism | Humanness ($p = .010$) | Hostile Sexism ($p = .001$) | .054 | .353 | <.001** |
| Overall Sexism | Humanness ($p = .006$) | ASI Overall ($p = .001$) | .054 | .251 | <.001** |
| Masculine Contingency | Humanness ($p = .006$) | MCS ($p = .001$) | .052 | .197 | <.001** |
| Masculine Norm: Risk | Humanness ($p = .007$) | Humanness ($p = .047$) CMNI Risk ($p = .005$) | .054 | .152 | .001** |
| Masculine Norm: Violence | Humanness ($p = .008$) | Humanness ($p = .049$) CMNI Violence ($p = .002$) | .054 | .160 | .001** |
| Masculine Norm: Power | Humanness ($p = .009$) | CMNI Power ($p = .001$) | .054 | .346 | <.001** |
| Masculine Norm: Playboy | Humanness ($p = .006$) | Humanness ($p = .005$) CMNI Playboy ($p = .004$) | .054 | .111 | .010* |
| Overall Masculine Norms | Humanness ($p = .004$) | CMNI Overall ($p = .001$) | .054 | .306 | <.001** |

Note. All coefficient p values based on 1000 bootstrap samples.

LSH.

Although the LSH scale was positively correlated with the other sexual aggression measures, and the majority of individual differences measures (see Table A1), it did not correlate with any dehumanization measures, which were the focal measures of this study. Thus, it was not analysed any further.

ASI Hostile Sexism.

The Hostile sexism sub-scale of the ASI was positively correlated with all measures of sexual aggression, and negatively correlated with all measure of dehumanization. Hostile sexism also remained the only significant factor in Step two when tested as an individual difference on the ASAI and ARVS, as discussed previously in this section. For these reasons, a hierarchical regression was run using this scale as an outcome variable. Humanness alone was entered in Step 1 and was a significant predictor of hostile sexism ($b = -1.001$, $SE = .208$, $\beta = -.470$, $p = .001$), Adjusted $R^2 = .212$. In Step 2, the SOQ, Morality, Warmth, and Competence were added to the model. Humanness remained the only significant predictor in Step 2 ($b = -1.198$, $SE = .272$, $\beta = -.563$, $p = .001$), Adjusted $R^2 = .193$. The results of this analysis can be found in Table A7 (or online as Table S3, <https://osf.io/yg9sc/>). Because Step 2 did not improve the variance accounted for in the overall model, and because Humanness remained as the only significant predictor, Humanness alone was used in subsequent analyses testing against individual differences variables.

As Hostile Sexism was not originally planned as an outcome variable, it could only be tested against those individual differences variables that participants responded to alongside it, and that it was also correlated with. These included Benevolent Sexism, the MCS, the Overall CMNI, and the CMNI subscales of Violence and Power. The results of these analyses can be found in Table A8 (or online in Table S18, <https://osf.io/s6p3k/>), and show that Humanness was retained in Step 2 of all models ($ps < .002$). Thus, Humanness accounted for significant variance in hostile sexism beyond that contributed by those correlated individual differences variables available for testing.

Table A7.

Linear Model of Predictors of Hostile Sexism

| | <i>b</i> | <i>SE B</i> | β | <i>p</i> |
|-----------------|----------------------------|-------------|---------|----------|
| <u>Step 1</u> | | | | |
| Constant | 1.127 (0.844, 1.380) | 0.135 | | .001 |
| Humanness | -1.001 (-1.390, -0.571) | 0.208 | -.470 | .001 |
| <u>Step 2</u> | | | | |
| Constant | 1.069 (0.648, 1.386) | 0.186 | | .001 |
| Humanness | -1.198 (-1.736, -0.690) | 0.272 | -.563 | .001 |
| Objectification | -0.004 (-0.156, 0.147) | 0.079 | -.005 | .953 |
| Morality | -0.047 (-0.673, 0.678) | 0.342 | -.025 | .891 |
| Warmth | 0.368 (-0.108, 0.912) | 0.260 | .193 | .141 |
| Competence | -0.041 (-0.640, 0.514) | 0.284 | -.021 | .876 |

Note. Adjusted $R^2 = .212$ for Step 1; Adjusted $R^2 = .193$ for Step 2.

95% bias corrected and accelerated confidence intervals reported in parentheses.

Confidence intervals and standard errors based on 1000 bootstrap samples.

Table A8.

Linear Model of Primary and Individual Difference Predictors of Hostile Sexism

| <i>Individual Difference Variable Tested</i> | <i>Significance of Humanness Step 1</i> | <i>Coefficients of Significance, Step 2</i> | <i>Adjusted R² Step 1</i> | <i>Adjusted R² Step 2</i> | <i>Δ Significance</i> |
|--|---|--|--|--|-----------------------|
| Benevolent Sexism | Humanness ($p = .001$) | Humanness ($p = .001$) Benevolent Sexism ($p = .001$) | .207 | .345 | <.001** |
| Masculine Contingency | Humanness ($p = .001$) | Humanness ($p = .001$) | .204 | .221 | .089 |
| Masculine Norm: Violence | Humanness ($p = .001$) | Humanness ($p = .001$) CMNI Violence ($p = .015$) | .207 | .264 | .005* |
| Masculine Norm: Power | Humanness ($p = .001$) | Humanness ($p = .002$) CMNI Power ($p = .001$) | .207 | .396 | <.001** |
| Overall Masculine Norms | Humanness ($p = .001$) | Humanness ($p = .001$) CMNI Overall ($p = .002$) | .207 | .294 | .001** |

Note. All coefficient p values based on 1000 bootstrap samples.

Table A9.

Overall Correlations Among Log-Transformed Variables (Study 1) and Non-Transformed Variables (Study 2, Preliminary Version A)

| | <i>Humanity</i> | <i>Human Nature</i> | <i>Human Uniqueness</i> | <i>Morality</i> | <i>Warmth</i> | <i>Competence</i> | <i>OOQ</i> |
|---|-----------------|---------------------|-------------------------|-----------------|----------------|-------------------|----------------|
| <u>Manipulation Checks</u> | | | | | | | |
| Humanness | 1 | | | | | | |
| Human Nature | NA | 1 | | | | | |
| Human Uniqueness | NA | .702** | 1 | | | | |
| | | .634** | | | | | |
| | | <i>.668</i> | | | | | |
| Morality | .631** | .578** | .590** | 1 | | | |
| | .494** | .538** | .417** | | | | |
| | <i>.5625</i> | <i>.588</i> | <i>.5035</i> | | | | |
| Warmth | .602** | .611** | .494** | .763** | 1 | | |
| | .582** | .604** | .406** | .762** | | | |
| | <i>.592</i> | <i>.6075</i> | <i>.4505</i> | <i>.7625</i> | | | |
| Competence | .682** | .611** | .650** | .746** | .658** | 1 | |
| | .580** | .495** | .596** | .631** | .591** | | |
| | <i>.631</i> | <i>.553</i> | <i>.623</i> | <i>.6885</i> | <i>.6245</i> | | |
| Objectification | .001 | .020 | -.026 | -.055 | -.088 | -.095 | 1 |
| | <i>.105</i> | .053 | .013 | .010 | .003 | .060 | |
| <u>Individual Differences Variables</u> | | | | | | | |
| ASAI | -.246** | -.277** | -.168* | -.102 | -.165* | -.070 | -.215** |
| | -.245** | -.177** | -.107* | -.172** | -.116* | -.117* | -.158** |
| | <i>-.2455</i> | <i>-.277</i> | <i>-.1375</i> | | <i>-.1405</i> | | <i>-.1865</i> |
| ARVS | -.236** | -.198** | -.234** | -.146* | -.092 | -.129 | -.089 |
| | -.420** | -.306** | -.282** | -.115** | -.062 | -.177** | -.165** |
| | <i>-.328</i> | <i>-.252</i> | <i>-.258</i> | <i>-.1305</i> | | | |
| Narcissism | -.184 | -.145 | -.200 | -.248* | -.157 | -.238* | -.021 |
| | -.248** | -.129* | -.099 | .017 | .051 | -.021 | -.103 |
| Psychopathy | -.071 | -.091 | -.040 | -.084 | .012 | -.118 | -.127 |
| | -.282** | -.165** | -.087 | -.001 | .070 | -.042 | -.117* |
| Hostile Sexism | -.464** | -.381** | -.470** | -.330** | -.224** | -.276** | -.094 |
| | -.411** | -.316** | -.250** | -.140* | -.115** | -.236** | -.276** |
| | <i>-.4375</i> | <i>-.3485</i> | <i>-.360</i> | <i>-.235</i> | <i>-.1695</i> | <i>-.256</i> | |

Note. * $p < 0.05$, two-tailed. ** $p < 0.01$, two tailed. Regular font is study one, bold is study two, italics is average correlation across both studies, where applicable. OOQ = Other Objectification Questionnaire; ASAI = Attraction to Sexual Aggression Inventory; ARVS = Attitudes Towards Rape Victims Scale.

Appendix C

Table A10.

Overall Correlations Among Common Variables: Study 1 Main Paper, Study 2 Preliminary Version A, Study 2 Preliminary Version B, & Study 2 Main Paper

| | <i>Humanness</i> | <i>Human Nature</i> | <i>Human Uniqueness</i> | <i>Morality</i> | <i>Warmth</i> | <i>Competence</i> | <i>OOQ</i> |
|---|--|--|---|---|---|---|--|
| <u>Manipulation Checks</u> | | | | | | | |
| Humanness | 1 | .940** <i>.897**</i> | .927** <i>.908**</i> | .656** | .633** | .687** | .012 |
| Human Nature | .941** | 1 | .742** <i>.637**</i> | .608** | .631** | .608** | .029 |
| Human Uniqueness | .938** | .634** <i>.766**</i> | 1 | .616** | .534** | .679** | -.014 |
| Morality | .494** <i>.680**</i> | .538** <i>.649**</i> | .417** <i>.628**</i> | 1 | .776** | .787** | -.076 |
| Warmth | .582** <i>.626**</i> | .604** <i>.650**</i> | .406** <i>.525**</i> | .762** <i>.771**</i> | 1 | .682** | -.102 |
| Competence | .580** <i>.736**</i> | .495** <i>.639**</i> | .596** <i>.745**</i> | .631** <i>.735**</i> | .591** <i>.604**</i> | 1 | -.092 |
| OOQ | .105 <i>-.068</i> | .053 <i>-.124</i> | .013 <i>-.004</i> | .010 <i>-.019</i> | .003 <i>-.172*</i> | .060 <i>.050</i> | 1 |
| <u>Outcome & Individual Differences Variables</u> | | | | | | | |
| Attraction to Sexual Aggression | -.232** <i>-.294**</i> | -.261** <i>-.338**</i> | -.165* <i>-.192*</i> | -.054 <i>-.066</i> | -.125 <i>-.015</i> | -.006 <i>-.105</i> | -.167* <i>-.097</i> |
| Unfavorable Attitudes Towards Rape Victims | -.228** <i>-.420**</i> | -.187* <i>-.306**</i> | -.234** <i>-.282**</i> | -.060 <i>-.115**</i> | -.080 <i>-.062</i> | -.061 <i>-.177**</i> | -.094 <i>-.165**</i> |
| Hostile Sexism | -.496** <i>-.411**</i> <i>-.137</i> <i>-.324**</i> | -.413** <i>-.316**</i> <i>-.094</i> <i>-.245**</i> | -.482** <i>-.250**</i> <i>-.165*</i> <i>-.333**</i> | -.333** <i>-.140*</i> <i>-.054</i> | -.264** <i>-.115**</i> <i>.081</i> | -.265** <i>-.236**</i> <i>-.174*</i> | -.166 <i>-.276**</i> <i>-.291**</i> |
| Rape Behavior Analogue | -.082 <i>-.108</i> | -.007 <i>-.117</i> | -.076 <i>-.070</i> | -.022 <i>-.024</i> | -.033 <i>-.021</i> | -.099 <i>-.033</i> | -.169* <i>-.331**</i> |

Note. * $p < 0.05$, two-tailed. ** $p < 0.01$, two-tailed. **Bold Italics** font is Study 1, **Bold Regular** font is Study 2PrelimA, Regular font is time 2PrelimB, and *Italics* is time 2Main. OOQ = Other Objectification Questionnaire.

Table A11.

Correlations Between Common Study Variables Based on Condition

| | <i>Study 2, Preliminary Version A</i> | | | <i>Study 2, Preliminary Version B</i> | | | <i>Study 2, Main Paper</i> | | |
|------------------|---|----------------|----------------|---|---------------|----------------|--------------------------------|----------------|----------------|
| | <i>H</i> | <i>HN</i> | <i>HU</i> | <i>H</i> | <i>HN</i> | <i>HU</i> | <i>H</i> | <i>HN</i> | <i>HU</i> |
| Humanness | 1 | | | 1 | | | 1 | | |
| Human Nature | - | 1 | | .929** | 1 | | .878** | 1 | |
| | | | | .950** | | | .904** | | |
| Human Uniqueness | - | .591** | 1 | .928** | .724** | 1 | .867** | .523** | 1 |
| | | .695** | | .946** | .797** | | .927** | .695** | |
| ASAI | -.245** | -.289** | -.135 | -.082 | -.075 | -.079 | -.187 | -.305* | -.015 |
| | -.071 | -.059 | -.071 | -.074 | -.050 | -.090 | -.445** | -.406* | -.399** |
| ARVS | -.420** | -.419** | -.321** | -.148 | -.123 | -.152 | -.089 | .032 | -.193 |
| | -.233** | -.187* | -.242** | -.278* | -.250* | -.277* | -.482** | -.286** | -.577** |
| Hostile Sexism | -.411** | -.404** | -.320** | .034 | .049 | .014 | -.136 | -.151 | -.085 |
| | -.225** | -.229** | -.185* | -.315** | -.241* | -.360** | -.520** | -.358** | -.576** |
| RBA | -.078 | -.042 | -.113 | -.162 | -.238 | -.047 | .166 | .074 | .219 |
| | .004 | .026 | -.022 | .016 | .050 | -.019 | -.360** | -.319** | -.328* |

Note. * $p < 0.05$, two-tailed. ** $p < 0.01$, two tailed. Regular font is control woman condition, bold is sexualized woman condition. H = Humanness; HN = Human Nature; HU = Human Uniqueness; ASAI = Attraction to Sexual Aggression Inventory; ARVS = Attitudes Towards Rape Victims; RBA = Rape Behavior Analogue.

Appendix D

Study 2 Compiled Measures

PARTICIPANT INFORMATION SHEET

MEN'S ATTITUDES TOWARDS A WOMAN

The effect of men's attitudes in relationship to women

INVITATION

You are being asked to take part in a research study on how men think about women and girls. This study aims to help in bettering our understanding of how men feel about women and sexuality. My name is Casey Bevens, and I am a PhD student working under the supervision of Dr. Steve Loughnan. This study will be the third in a series relevant to these same issues that will make up my PhD. This study aims to establish how men believe they would behave and think about certain issues surrounding sex and women. The Psychology Research Ethics Committee has approved this study.

WHAT WILL HAPPEN

In this study, you will be asked to respond to a series of measures online. Specifically, the study will ask about your feelings concerning hypothetical women, ask you to view images that include sexual and violent content, and ask for your opinions on a range of topics related to women and sexuality.

PLEASE BE AWARE THAT THIS STUDY CONTAINS IMAGES THAT MAY BE OFFENSIVE TO SOME PEOPLE AND INCLUDES QUESTIONS ABOUT ATTITUDES CONCERNING SEXUAL VIOLENCE.

TIME COMMITMENT

The study typically takes about ten minutes.

PARTICIPANTS' RIGHTS

You may decide to stop being a part of the research study at any time without explanation or penalty. You have the right to ask that any data you have supplied to that point be withdrawn/destroyed. You will still be paid for your contribution.

You have the right to omit or refuse to answer or respond to any question that is asked of you.

You have the right to have your questions about the procedures answered (unless answering these questions would interfere with the study's outcome). If you have any questions as a result of reading this information sheet, you

should ask the researcher before the study begins by contacting me at s1618394@sms.ed.ac.uk

BENEFITS AND RISKS

Benefits of participating in this study include the chance to help further the understanding of human sexuality, and the payment you will receive. There are no known major risks of participating in this study, although the subject matter includes sensitive and personal topics that have the potential to make some people uncomfortable.

COST, REIMBURSEMENT AND COMPENSATION

Your participation in this study is voluntary. You will receive 1 pound in return for your participation.

CONFIDENTIALITY/ANONYMITY

The data we collect do not contain any personal information about you. No one will link the data you provided to identifying information.

FOR FURTHER INFORMATION

Casey Bevens will be glad to answer your questions about this study at any time. You may contact her at 44 7802 487878 or s1618394@sms.ed.ac.uk. Alternatively, you can contact the supervisor for this project, Dr. Steve Loughnan at steve.loughnan@ed.ac.uk. If you want to find out about the final results of this study, you should contact Casey Bevens in one of these ways.

[Page Break]

INFORMED CONSENT FORM

MEN'S ATTITUDES TOWARDS A WOMAN

You are being asked to consent to participation in a study about men's attitudes about women, girls, and sex. This study will ask about your feeling on topics related to women and sexuality, particularly aggressive sexuality.

By clicking continue below, you are agreeing that: (1) you have read and understood the Participant Information Sheet, (2) questions about your participation in this study have been answered satisfactorily, (3) you are aware of the potential risks (if any), (4) you are taking part in this research study voluntarily (without coercion), and (5) anonymised data only may be shared in public research repositories.

Study 2 Manipulation

“The woman below is a recent graduate from a psychology program in the United Kingdom. She enjoys spending time with friends and dating.”



Image Used in Control Condition

“Please take some time to write about the person above. Focus on both positive and negative aspects”



Image Used in Sexualized Condition

“Please take some time to write about the appearance of the person above. Focus on both positive and negative aspects.”

Ratings of human nature and human uniqueness, as used in Study 2
Scaled from 1 (*Not at all*) to 7 (*Very much so*), Bastian, et al. (2012):

[image based on assigned condition shown]

“Rate the extent to which the person you wrote about:”

Human Nature items:

- Is open minded and can think clearly about things
- Is emotional, responsive, and warm
- *Is mechanical and cold, like a robot
- *Is superficial and has no depth

Human Uniqueness items:

- Is refined and cultured
- Is rational, logical, and intelligent
- *Lacks self-restraint, like an animal
- *Is unsophisticated

*Reverse scored

Rape Behavior Analogue

[image based on assigned condition shown]

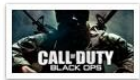
“Imagine you are working to help select pictures for an upcoming study. Along with other women, the woman you wrote about will be participating in this study. It will involve women being exposed many times to a subset of the images you choose, in order to test perception.

For this next task, we will show you two pictures and we would like you to pick the one you think should be used in the women’s study. Pick the one you think should be shown to the woman you wrote about many times.”

[Page Break]

Accompanying each pair presented: “Which of these images would you choose to show to the woman many times?”

Thumbnails of images used in Rape Behaviour Analogue, as used in Study 2



Violent Images



Sexual-violent images

Modified Attraction to Sexual Aggression Inventory (m-ASAI), as used in

Study 2

[Image of woman from given condition shown]

“ People frequently think about different activities even if they never do them. For each kind of activity listed, please indicate your thoughts in relation to the woman you wrote about, according to the scale given.”

Scale: 1- *Very Unattractive*; 5 *Very Attractive*

In relation to the woman you wrote about do you find the idea of:

Rape

Forcing her to do something sexual she didn't want to do

Scale: 1- *Less than 20%*; 2- *Between 20% and 40%*; 3- *Between 40% and 60%*; 4- *Between 60% and 80%*; 5- *Between 80% and 100%*

In relation to the woman you wrote about, what percentage of males do you think would find the following activities sexually arousing?

Rape

Forcing her to do something sexual she didn't want to do

Scale: 1- *Not at all attractive*; 5- *Very attractive*

How attractive do you think the woman you wrote about would find the following activities?

Rape

Being forced to do something sexual she didn't want to do

Forcing a male to do something sexual he didn't want to do

Scale: 1- *Very un-arousing*; 5- *Very arousing*

How sexually arousing do you think you would find the following sexual activities if you engaged in them with the woman you wrote about?

Rape

Forcing her to do something sexual she didn't want to do

Being forced to do something sexual you didn't want to do

Scale: 1- *Not at all likely*; 5- *Certainly likely*

If you could be assured that no one would know and that you could in no way be punished for engaging in the following acts, how likely, if at all, would you be to commit such acts with the woman you wrote about?

Rape

Forcing her to do something sexual she didn't want to do

[Image of woman based on condition shown]

“Imagine that you see an online newspaper article which states that the woman above was raped. For the following items, please indicate the extent to which you agree or disagree with each statement about her.” (Scale: 1- *Disagree Strongly*; 5- *Agree Strongly*)

- The raped woman is a less desirable woman.
- The extent of the woman’s resistance should be the major factor in determining if a rape has occurred.
- *The raped woman is an innocent victim.
- The woman may be claiming rape to protect her reputation.
- *Even if the woman is a “good” girl she was as likely to be raped as “bad” girls.
- Since the woman has had prior sexual relationships, she should not complain about rape.
- *The woman did not provoke rape by their appearance or behavior.
- It did that woman good to be raped.
- *Even if the woman felt guilty about engaging in premarital sex, it is not likely she would falsely claim rape.
- This woman secretly desired to be raped.
- *Any female may be raped.
- If this woman was raped while accepting a ride from a stranger, she got what she deserved.
- This woman may have invented her rape story if she had learned she was pregnant.
- *The man, not the woman, was responsible for her rape.
- If this woman went out alone at night, she put herself in a position to be raped.
- The woman may have claimed rape if she consented to sexual relations but changed her mind afterwards.
- *The woman should not blame herself for rape.
- Since this woman is healthy, she should have been able to successfully resist a rapist if she really tried.
- This woman may have been lying in reporting the rape because she was angry or wanted revenge on the accused.
- *Even if the woman was wearing a short skirt or tight blouse, she was not inviting rape.

- The woman may have put herself in a situation in which she was likely to be sexually assaulted because she had an unconscious wish to be raped.
- This woman was not really damaged by rape because she is sexually experienced.
- If this woman was raped, she deserved it.
- If the woman was intoxicated, it must mean she was willing to have sexual relations.

*Reverse scored

Modified ASI-Hostile Sexism Scale, as used in Study 2

[Image of woman based on condition shown]

“Below is a series of statements concerning men and women and their relationships in contemporary society. When you think about the woman above, please indicate the degree to which you agree or disagree with each statement using the scale indicated.” (Scale: 1- *Disagree Strongly*; 6- *Agree Strongly*).

- The woman is likely to actually seek special favors, such as hiring policies that favor her over men, under the guise of asking for “equality.”
- The woman is likely to interpret innocent remarks or acts as being sexist.
- The woman is likely to be too easily offended.
- The woman is likely to fail to appreciate fully all that men do for her.
- The woman is likely to seek to gain power by getting control over men.
- The woman is likely to exaggerate problems she has at work.
- Once this woman gets a man to commit to her, she will usually try to put him on a leash.
- When this woman loses to men in a fair competition, she typically is likely to complain about being discriminated against.
- *This woman is not likely to get a kick out of teasing men by seeming sexually available and then refusing their advances.

*Reverse scored

Debriefing Form

Thank you for taking the time to complete this study. There exists a growing area of research in psychology concerning the objectification of women and its consequences. The current study aims to help better our understanding of men's attitudes about sexualized women and girls and examines the possibility that aggression may be related to objectifying attitudes.

There exists variability among men in how they respond to the items you saw today, and we do not assume that men in general endorse aggressive behaviors and attitudes. Your participation today will contribute to the literature illuminating individual differences in tendencies both towards and against aggression. Please be assured again that all responses you have given today are completely anonymous, and that the researchers have no way of linking them to you at any time.

If you have any questions about the research project, please contact Casey Bevens at s1618394@sms.ed.ac.uk or 44 7802 487878. Alternatively, you can contact the supervisor for this project, Dr. Steve Loughnan at steve.loughnan@ed.ac.uk. Thank you again for your time and effort, and for your contribution to this project.

If the subject matter of this study has made you uncomfortable in any way, or you would like to learn more about sexual assault the Edinburgh Rape Crisis Centre can be reached at 08088 01 03 02 or support@ercc.scot.

Appendix E

Study 2, Preliminary Versions A & B Compiled Measures

Study 2 Preliminary Version A: Participant Information & Consent Forms

PARTICIPANT INFORMATION SHEET

BEHAVIOR AND ATTITUDES AMONG MEN

The effect of men's attitudes in relationship to women

INVITATION

You are being asked to take part in a research study on how men think about women and girls. This study aims to help in bettering our understanding of how men feel about women and sexuality. My name is Casey Bevens, and I am a PhD student working under the supervision of Dr. Steve Loughnan. This study will be the second in a series relevant to these same issues that will make up my PhD. This study aims to establish how men believe they would behave and think about certain issues surrounding sex and women. The Psychology Research Ethics Committee has approved this study.

WHAT WILL HAPPEN

In this study, you will be asked to respond to a series of measures online. Specifically, the study will ask about your feelings concerning hypothetical women, ask you to view images that include sexual and violent content, and ask for your opinions on a range of more general topics related to women and sexuality.

TIME COMMITMENT

The study typically takes about ten minutes.

PARTICIPANTS' RIGHTS

You may decide to stop being a part of the research study at any time without explanation or penalty. You have the right to ask that any data you have supplied to that point be withdrawn/destroyed. You will still be paid for your contribution.

You have the right to omit or refuse to answer or respond to any question that is asked of you.

You have the right to have your questions about the procedures answered (unless answering these questions would interfere with the study's outcome). If you have any questions as a result of reading this information sheet, you

should ask the researcher before the study begins by contacting me at s1618394@sms.ed.ac.uk

BENEFITS AND RISKS

Benefits of participating in this study include the chance to help further the understanding of human sexuality, and the payment you will receive. There are no known major risks of participating in this study, although the subject matter includes sensitive and personal topics that have the potential to make some people uncomfortable.

COST, REIMBURSEMENT AND COMPENSATION

Your participation in this study is voluntary. You will receive 1.5 pounds in return for your participation.

CONFIDENTIALITY/ANONYMITY

The data we collect do not contain any personal information about you. No one will link the data you provided to identifying information.

FOR FURTHER INFORMATION

Casey Bevens will be glad to answer your questions about this study at any time. You may contact her at 44 7802 487878 or s1618394@sms.ed.ac.uk. If you want to find out about the final results of this study, you should contact Casey Bevens in one of these ways.

[Page Break]

INFORMED CONSENT FORM

MEN'S ATTITUDES AND EXPERIENCES

You are being asked to consent to participation in a study about men's attitudes about women, girls, and sex. This study will ask about your feeling on a range of topics related to women and sexuality, including aggressive sexuality.

By clicking continue below, you are agreeing that: (1) you have read and understood the Participant Information Sheet, (2) questions about your participation in this study have been answered satisfactorily, (3) you are aware of the potential risks (if any), (4) you are taking part in this research study voluntarily (without coercion), and (5) anonymised data only may be shared in public research repositories.

Study 2 Preliminary Version B: Participant Information & Consent Forms

PARTICIPANT INFORMATION SHEET

BEHAVIOR AND ATTITUDES AMONG MEN

The effect of men's attitudes in relationship to women

INVITATION

You are being asked to take part in a research study on how men think about women and girls. This study aims to help in bettering our understanding of how men feel about women and sexuality. My name is Casey Bevens, and I am a PhD student working under the supervision of Dr. Steve Loughnan. This study will be part of a series relevant to these same issues that will make up my PhD. This study aims to establish how men believe they would behave and think about certain issues surrounding sex and women. The Psychology Research Ethics Committee has approved this study.

WHAT WILL HAPPEN

In this study, you will be asked to respond to a series of measures online. Specifically, the study will ask about your feelings concerning hypothetical women, ask you to view images that include sexual and violent content, and ask for your opinions on a range of more general topics related to women and sexuality.

TIME COMMITMENT

The study typically takes about ten minutes.

PARTICIPANTS' RIGHTS

You may decide to stop being a part of the research study at any time without explanation or penalty. You have the right to ask that any data you have supplied to that point be withdrawn/destroyed. You will still be paid for your contribution.

You have the right to omit or refuse to answer or respond to any question that is asked of you.

You have the right to have your questions about the procedures answered (unless answering these questions would interfere with the study's outcome). If you have any questions as a result of reading this information sheet, you should ask the researcher before the study begins by contacting me at s1618394@sms.ed.ac.uk

BENEFITS AND RISKS

Benefits of participating in this study include the chance to help further the understanding of human sexuality, and the payment you will receive. There are no known major risks of participating in this study, although the subject

matter includes sensitive and personal topics that have the potential to make some people uncomfortable.

COST, REIMBURSEMENT AND COMPENSATION

Your participation in this study is voluntary. You will receive 1 pounds in return for your participation.

CONFIDENTIALITY/ANONYMITY

The data we collect do not contain any personal information about you. No one will link the data you provided to identifying information.

FOR FURTHER INFORMATION

Casey Bevens will be glad to answer your questions about this study at any time. You may contact her at 44 7802 487878 or s1618394@sms.ed.ac.uk. If you want to find out about the final results of this study, you should contact Casey Bevens in one of these ways.

[Page Break]

INFORMED CONSENT FORM

MEN'S ATTITUDES AND EXPERIENCES

You are being asked to consent to participation in a study about men's attitudes about women, girls, and sex. This study will ask about your feeling on a range of topics related to women and sexuality, including aggressive sexuality.

By clicking continue below, you are agreeing that: (1) you have read and understood the Participant Information Sheet, (2) questions about your participation in this study have been answered satisfactorily, (3) you are aware of the potential risks (if any), (4) you are taking part in this research study voluntarily (without coercion), and (5) anonymised data only may be shared in public research repositories.

Study 2 Preliminary Version A Manipulation

“The woman below is a recent graduate from a psychology program in the United Kingdom. She enjoys spending time with friends and dating.”



Image Used in Sexualized Condition

“Please take some time to write about this person’s physical appearance. Focus on both positive and negative aspects”



Image Used in Control Condition

“Please take some time to write about this person. Focus on both positive and negative aspects.”

Study 2 Preliminary Version B Manipulation

“The woman below is a recent graduate from a psychology program in the United Kingdom. She enjoys spending time with friends and dating.”



Image Used in Control Condition

“Please take some time to write about this person. Focus on both positive and negative aspects”



Image Used in Sexualized Condition

“Please take some time to write about this person’s physical appearance. Focus on both positive and negative aspects.”

Manipulation Checks (Study 2 Versions 2A & 2B)

- How sexy do you consider the person you wrote about to be? (1, Not at all sexy-5, Very sexy)

“Rate the extent to which the person you wrote about:”
(Scale” 1, *Not at all*- 7, *Very much so*)

Human Nature items:

- Is open minded and can think clearly about things
- Is emotional, responsive, and warm
- *Is mechanical and cold, like a robot
- *Is superficial and has no depth

Human Uniqueness items:

- Is refined and cultured
- Is rational, logical, and intelligent
- *Lacks self-restraint, like an animal
- *Is unsophisticated

*Reverse scored

“Rate the extent to which the person you wrote about is:”
(Scale: 1, *Not at all*- 7, *Very much so*)

- Honest
- Sincere
- Trustworthy
- Likeable
- Warm
- Friendly
- Competent
- Intelligent
- Skilled

“This section is concerned with how people think about women’s bodies. Listed below are 10 different body attributes. When you think about the woman you wrote about, which of these body attributes do you think is most important? I would like you to rank the attributes in order from what you think is most important to what you think is least important.

Please consider all the attributes simultaneously and record your answers by ranking the items in the boxes next to each one.

Remember, 1= most important, 2= next most important... 10= least important.”

- Physical Coordination
- Health
- Weight
- Strength
- Sex Appeal
- Physical Attractiveness
- Energy Level (e.g. Stamina)
- Firm/Sculpted Muscles
- Physical Fitness Level
- Measurements (e.g. Chest, Waist, Hips)

RBA and Interest Paradigms, as used in Study 2 Preliminary Versions A & B

Rape Behavior Analogue

"Imagine you are working to help select pictures for an upcoming study. Along with other women, the woman you wrote about will be participating in this study. It will involve women being exposed many times to a subset of the images you choose, in order to test perception.

For this next task, we will show you two pictures and we would like you to pick the one you think should be used in the women's study. Pick the one you think should be shown to women many times."

[Page Break]

Accompanying each pair presented: "Which of these would you show to women many times?"

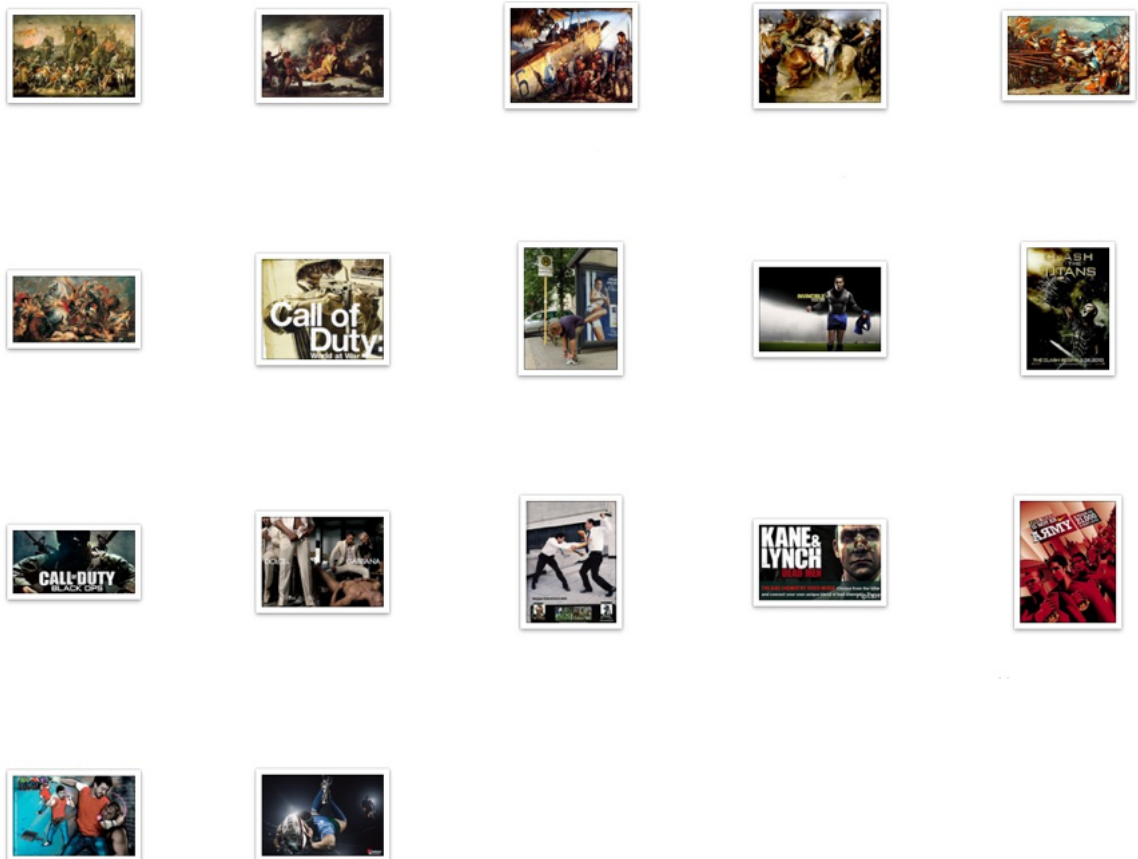
Sexual Aggression Interest Paradigm

"Please consider the images on the following pages and try to form an impression of their content. Then, rate each slide on how much it appeals to you."

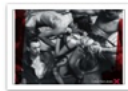
[each image from the RBA presented individually, along with the following item]

- How appealing do you find the image above?" (Scale: 1, Not at all appealing- 4, Very appealing); Page timing uses as an additional measure of interest.

Thumbnails of images used in Rape Behaviour Analogue, as used in Study 2



Violent Images



Sexually Violent Images

Attraction to Sexual Aggression Inventory, Rape Proclivity sub-scale
(Malamuth, 1989
(Scale from 1- 5); As used in Study 2 Preliminary Versions A & B

“People frequently think about different activities even if they never do them. For each kind of activity listed, please indicate whether or not you have ever thought of trying that activity according to the scale given.” (Scale: 1, *Have never thought of it*; 5, *Have very frequently thought of it*)

- Rape
- Forcing a female to do something sexual she didn't want to do

Whether or not you have ever thought of it, do you find the idea:
(Scale: 1, *Very Unattractive*- 5, *Very Attractive*)

- 3. Rape
- 4. Forcing a female to do something sexual she didn't want to do

What percentage of *males* do you think would find the following activities sexually arousing?

(Scale: 1, *Less than 20%*- 5, *Between 80% and 100%*)

- 5. Rape
- 6. Forcing a female to do something sexual she didn't want to do

What percentage of *females* do you think would find the following activities sexually arousing?

(Scale: 1, *Less than 20%*- 5, *Between 80% and 100%*)

- 7. Rape
- 8. Being forced to do something sexual they didn't want to do
- Forcing a male to do something sexual he didn't want to do

How sexually arousing do you think you would find the following sexual activities if you engaged in them (even if you have never engaged in them)?

(Scale: 1, *Very Un-arousing* – 5, *Very arousing*)

- Rape
- Forcing a female to do something sexual she didn't want to do
- Being forced to do something sexual you didn't want to do

If you could be assured that no one would know and that you could in no way be punished for engaging in the following acts, how likely, if at all, would you be to commit such acts?

(Scale: 1, *Not at all likely*- 5, *Certainly likely*)

- 13. Rape
- 14. Forcing a female to do something sexual she didn't want to do

Attitudes Towards Rape Victims Scale (Ward, 1988)
As used in Study 2 Preliminary Versions A & B

"For the following items, please indicate the extent to which you agree or disagree with each statement:" (Scale: 1, *Disagree strongly*- 5, *Agree strongly*)' *Reverse Scored

- A raped woman is a less desirable woman.
- The extent of the woman's resistance should be the major factor in determining if a rape has occurred.
- * A raped woman is usually an innocent victim.
- Women often claim rape to protect their reputations.
- * "Good" girls are as likely to be raped as "bad" girls.
- Women who have had prior sexual relationships should not complain about rape.
- *Women do not provoke rape by their appearance or behavior.
- Intoxicated women are usually willing to have sex.
- It would do some women good to be raped.
- *Even women who feel guilty about engaging in premarital sex are not likely to claim rape falsely.
- Most women secretly desire to be raped.
- *Any female may be raped.
- Women who are raped while accepting rides from strangers get what they deserve.
- Many women invent rape stories if they learn they are pregnant.
- *Men, not women, are responsible for rape.
- A woman who goes out alone at night puts herself in a position to be raped.
- Many women claim rape if they have consented to sexual relations but have changed their minds afterwards.
- Accusations of rape by bar girls, dance hostesses and prostitutes should be viewed with suspicion.
- *A woman should not blame herself for rape.
- A healthy woman can successfully resist a rapist if she really tries.
- Many women who report rape are lying because they are angry or want revenge on the accused.
- *Women who wear short skirts or tight blouses are not inviting rape.
- Women put themselves in situations in which they are likely to be sexually assaulted because they have an unconscious wish to be raped.
- Sexually experienced women are not really damaged by rape.
- In most cases when a woman was raped, she deserved it.

Short Dark Triad Scale, psychopathy and narcissism sub-scales (Jones & Paulhus, 2014)

"Please indicate how much you agree with each of these statements."
(Scale: 1, *Disagree strongly* -5, *agree strongly*)

Psychopathy Sub-Scale Items:

- I like to get revenge on authorities.
- *I avoid dangerous situations.
- Payback needs to be quick and nasty.
- People often say I'm out of control.
- It's true that I can be mean to others.
- People who mess with me always regret it.
- *I have never gotten into trouble with the law.
- I enjoy having sex with people I hardly know
- I'll say anything to get what I want.

Narcissistic Sub-Scale Items:

- People see me as a natural leader.
- *I hate being the center of attention.
- Many group activities tend to be dull without me.
- I know that I am special because everyone keeps telling me so.
- I like to get acquainted with important people.
- *I feel embarrassed if someone compliments me.
- I have been compared to famous people.
- *I am an average person.
- I insist on getting the respect I deserve.

*Reverse scored

Ambivalent Sexism Inventory (Glick & Fiske, 1996)
Hostile and Benevolent Sexism sub-scales, as used in Study 2 Preliminary
Versions A & B

"Below is a series of statements concerning men and women and their relationships in contemporary society. Please indicate the degree to which you agree or disagree with each statement using the scale indicated." (Scale: 1, *Disagree Strongly*- 6, *Agree Strongly*).

- No matter how accomplished he is, a man is not truly complete as a person unless he has the love of a woman. (B)
- Many women are actually seeking special favors, such as hiring policies that favor them over men, under the guise of asking for "equality." (H)
- *In a disaster, women ought not necessarily be rescued before men. (B)
- Most women interpret innocent remarks or acts as being sexist. (H)
- Women are too easily offended. (H)
- *People are often truly happy in life without being romantically involved with a member of the other sex. (B)
- *Feminists are not seeking for women to have more power than men. (H)
- Many women have a quality of purity that few men possess. (B)
- Women should be cherished and protected by men. (B)
- Most women fail to appreciate fully all that men do for them. (H)
- Women seek to gain power by getting control over men. (H)
- Every man ought to have a woman whom he adores. (B)
- *Men are complete without women. (B)
- Women exaggerate problems they have at work. (H)
- Once a woman gets a man to commit to her, she usually tries to put him on a tight leash. (H)
- When women lose to men in a fair competition, they typically complain about being discriminated against. (H)
- A good woman should be set on a pedestal by her man. (B)
- *There are actually very few women who get a kick out of teasing men by seeming sexually available and then refusing male advances. (H)
- Women, compared to men, tend to have a superior moral sensibility. (B)
- Men should be willing to sacrifice their own well-being in order to provide financially for the women in their lives. (B)
- *Feminists are making entirely reasonable demands of men. (H)
- Women, as compared to men, tend to have a more refined sense of culture and good taste. (B)

*Reverse scored

Debrief, Study 2 Preliminary Versions A & B

Thank you for taking the time to complete this study. There exists a growing area of research in psychology concerning the objectification of women and its consequences. The current study aims to help better our understanding of men's attitudes about sexualized women and girls and examines the possibility that aggression may be related to objectifying attitudes.

There exists variability among men in how they respond to the items you saw today, and we do not assume that men in general endorse aggressive behaviors and attitudes. Your participation today will contribute to the literature illuminating individual differences in tendencies both towards and against aggression. Please be assured again that all responses you have given today are completely anonymous, and that the researchers have no way of linking them to you at any time.

If you have any questions about the research project, please contact Casey Bevens at s1618394@sms.ed.ac.uk or 44 7802 487878. Thank you again for your time and effort, and for your contribution to this project.

Appendix F

Stimuli Images Pilot Complied Measures

PARTICIPANT INFORMATION SHEET

RESEARCH STIMULI PILOT

INVITATION

You are being asked to take part in a study that will determine stimuli to be used in future research about what men think about women and girls. My name is Casey Bevens, and I am a PhD student working under the supervision of Dr. Steve Loughnan. This study aims to establish how men perceive images to be used in later work. The Psychology Research Ethics Committee has approved this study.

WHAT WILL HAPPEN

In this study, you will be asked to respond to a series of measures online. Specifically, the study will include several photographs of women, each of which will be followed by some short survey items.

TIME COMMITMENT

The study typically takes about ten minutes.

PARTICIPANTS' RIGHTS

You may decide to stop being a part of the research study at any time without explanation or penalty. You have the right to ask that any data you have supplied to that point be withdrawn/destroyed. You will still be paid for your contribution.

You have the right to omit or refuse to answer or respond to any question that is asked of you.

You have the right to have your questions about the procedures answered (unless answering these questions would interfere with the study's outcome). If you have any questions as a result of reading this information sheet, you should ask the researcher before the study begins by contacting me at s1618394@sms.ed.ac.uk

BENEFITS AND RISKS

Benefits of participating in this study include the payment you will receive. There are no known risks of participating in this study.

COST, REIMBURSEMENT AND COMPENSATION

Your participation in this study is voluntary. You will receive .50 pounds in return for your participation.

CONFIDENTIALITY/ANONYMITY

The data we collect do not contain any personal information about you. No one will link the data you provided to identifying information.

FOR FURTHER INFORMATION

Casey Bevens will be glad to answer your questions about this study at any time. You may contact her at 44 7802 487878 or s1618394@sms.ed.ac.uk

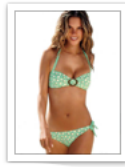
[Page Break]

INFORMED CONSENT FORM**RESEARCH STIMULI PILOT**

You are being asked to consent to participation in a study about your thought and perceptions of images of women.

By clicking continue below, you are agreeing that: (1) you have read and understood the Participant Information Sheet, (2) questions about your participation in this study have been answered satisfactorily, (3) you are aware of the potential risks (if any), (4) you are taking part in this research study voluntarily (without coercion), and (5) anonymised data only may be shared in public research repositories.

Images Tested in Stimuli Images Pilot



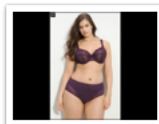
Woman1



Woman 2



Woman 3



Woman 4



Woman 5

Scales Following Each Image of each woman, Stimuli Images Pilot

- How sexy do you consider the woman above about to be? (1, Not at all sexy-5, Very sexy)

“Rate the extent to which the person above:”
(Scale” 1, *Not at all*- 7, *Very much so*)

Human Nature items:

- Is open minded and can think clearly about things
- Is emotional, responsive, and warm
- *Is mechanical and cold, like a robot
- *Is superficial and has no depth

Human Uniqueness items:

- Is refined and cultured
- Is rational, logical, and intelligent
- *Lacks self-restraint, like an animal
- *Is unsophisticated

*Reverse scored

“Rate the extent to which the woman above is:”
(Scale: 1, *Not at all*- 7, *Very much so*)

- Honest
- Sincere
- Trustworthy
- Likeable
- Warm
- Friendly
- Competent
- Intelligent
- Skilled

“This section is concerned with how people think about women’s bodies. Listed below are 10 different body attributes. When you think about the woman above, which of these body attributes do you think is most important? I would like you to rank the attributes in order from what you think is most important to what you think is least important.

Please consider all the attributes simultaneously and record your answers by ranking the items in the boxes next to each one. Use each number only once.

Remember, 1= most important, 2= next most important... 10= least important.”

- Physical Coordination
- Health
- Weight
- Strength
- Sex Appeal
- Physical Attractiveness
- Energy Level (e.g. Stamina)
- Firm/Sculpted Muscles
- Physical Fitness Level
- Measurements (e.g. Chest, Waist, Hips)

Debrief, Stimuli Images Pilot

Thank you for taking the time to complete this study! Your responses have been recorded and will be helpful in determining stimuli for future research on the objectification of women.

Appendix G

Lab Pilot Studies (1 & 2) Compiled Materials & Measures

Facebook Lab Pilot 1, Materials

PARTICIPANT INFORMATION SHEET AND CONSENT

FACEBOOK CHAT PILOT STUDY

A study concerning online dating and early impression formation

INVITATION

You are being asked to take part in a research study on how men and women interact online.

WHAT WILL HAPPEN

In this study, you will be asked to login to your Facebook account and accept a friend request from a stranger of the opposite sex in another room. The pair of you will chat as you would when trying to get to know someone as a potential dating partner.

TIME COMMITMENT

The study typically takes about twenty minutes in total.

PARTICIPANTS' RIGHTS

You may decide to stop being a part of the research study at any time without explanation or penalty. You have the right to ask that any data you have supplied to that point be withdrawn/destroyed. You will still receive credit for your contribution.

You have the right to have your questions about the procedures answered (unless answering these questions would interfere with the study's outcome). If you have any questions as a result of reading this information sheet, you should ask the researcher before the study begins.

BENEFITS AND RISKS

Benefits of participating in this study include the chance to help further the understanding of human sexuality, and the course credit you will receive. There are no known major risks of participating in this study.

COST, REIMBURSEMENT AND COMPENSATION

Your participation in this study is voluntary. You will receive 3 GBP in return for your participation.

CONFIDENTIALITY/ANONYMITY

The data we collect today will contain identifying information about you, however, no one will have access to this information at any time outside of the research team. Should this data lead to publication, all identifying information will be anonymized.

In this study you are using a university computer. Please remember that this means that your use of this computer (e.g., browsing history) is accessible to university staff including the researchers in this study. Thus, your use of the computer is not private.

FOR FURTHER INFORMATION

Casey Bevens will be glad to answer your questions about this study at any time. You may contact her at 44 7802 487878 or s1618394@sms.ed.ac.uk. Alternatively, you may contact Dr. Steve Loughnan at steve.loughnan@ed.ac.uk.

INFORMED CONSENT FORM

FACEBOOK CHAT PILOT STUDY

You are being asked to consent to participation in a study about how men and women interact online in the context of early dating and impression formation. This study will require you to chat with a member of the opposite sex on Facebook messenger.

By signing below, you are agreeing that: (1) you have read and understood the Participant Information Sheet, (2) questions about your participation in this study have been answered satisfactorily, (3) you are aware of the potential risks (if any), (4) you are taking part in this research study voluntarily (without coercion), and (5) anonymised data only may be shared in public research repositories.

Signature

Printed Name

Items to assess the realism of the scenario at the conclusion of the study:

1. Did you believe that this is a real Facebook account?
2. Did you believe that you would be chatting with the owner of this account?
3. Do you think that there are things we could change about what happened today to make this scenario more believable?

The Facebook account to be used in this study can be found at:

<https://www.facebook.com/ellie.james.58760608>

All images and information used in the making of this account have the consent of the woman depicted for their use.

Debriefing Form

Thank you for taking the time to complete this study. There exists a growing area of research in psychology concerning the role of objectification in men's behaviour in relation to women. Today's study did not directly look at objectification, but was a pilot study of methodology to be used in future work in this area for a PhD project.

We sought to explore whether men vary in how they respond to the online presentation of a woman who is a stranger to them when they believe themselves to be unobserved. The Facebook account of "Ellie James" does not belong to a real woman. Data for this study will be collected by filtering your browsing history using a "Facebook" search term related to this account, in order to differentiate between behaviour that includes viewing that account, and general Facebook browsing behaviour. None of your browsing history outside of the Facebook site will be viewed or examined in any way. Should you desire, you have the right for all browsing history we would have collected today to be deleted without being viewed or used. You can delete the browsing history of the computer now yourself, so that the researcher sees nothing. This can be done by clicking control-H on your keyboard, and then clicking 'clear browsing history.'

We do not assume that men in general endorse intrusive or objectifying behaviours and attitudes towards women.

Please be assured that the data collected from you today will remain secure and anonymous. Only the researcher will have access to any identifying information during the data collection process. No identifying or personal information will be used in the analysis of this data. Should this data be used in publication, all identifying information will be anonymized.

If you have any questions about the research project, please contact Casey Bevens at s1618394@sms.ed.ac.uk or 44 7802 487878. Alternatively, you can contact Dr. Steve Loughnan at steve.loughnan@ed.ac.uk. Thank you again for your time, and for your contribution to this project.

Debrief follow up questions:

1. What, if any, aspects of this scenario made you suspicious?
2. Did you believe that this is a real Facebook account?
3. Did you believe that you would be chatting with the owner of this account?
4. Given that this study had no chatting and a false Facebook account, do you think that there are things we could change about what happened today to make this scenario more believable?
5. Were you uncomfortable at any time while you were participating in this study today?
6. We are considering doing a version of this methodology using screen record video software. Having participated in the version using your browsing history, do you think that you would be comfortable (hypothetically) participating in an iteration of the same study that used this type of video software to capture screen activity?

Anonymous Feedback Form

Facebook Pilot Study

Researchers: Casey Bevens and Steve Loughnan
University of Edinburgh

Please feel free to provide any feedback you have concerning your recent study participation experience in the space below. Thank you for your time.

PARTICIPANT INFORMATION SHEET AND CONSENT

FACEBOOK CHAT PILOT STUDY

This is a study concerning personal preferences, online dating, and early impression formation.

INVITATION

You are being asked to take part in a research study on personality characteristics and how men and women interact online.

WHAT WILL HAPPEN

In this study, you will be asked to complete a series of questionnaire items. These are related to your meat-eating preferences. You will then be asked to login to your Facebook account and accept a friend request from a stranger of the opposite sex in another room. The pair of you will chat as you would when trying to get to know someone as a potential dating partner.

TIME COMMITMENT

The study typically takes about twenty minutes in total.

PARTICIPANTS' RIGHTS

You may decide to stop being a part of the research study at any time without explanation or penalty. You have the right to ask that any data you have supplied to that point be withdrawn/destroyed. You will still receive payment for your contribution.

You have the right to have your questions about the procedures answered (unless answering these questions would interfere with the study's outcome). If you have any questions as a result of reading this information sheet, you should ask the researcher before the study begins.

BENEFITS AND RISKS

Benefits of participating in this study include the chance to help further the understanding of human interactions, and the payment you will receive. There are no known major risks of participating in this study.

COST, REIMBURSEMENT AND COMPENSATION

Your participation in this study is voluntary. You will receive 3 GBP in return for your participation.

CONFIDENTIALITY/ANONYMITY

The data we collect today will contain identifying information about you, however, no one will have access to this information at any time outside of the research team. Should this data lead to publication, **all** identifying information will be anonymized.

In this study you are using a university computer. Please remember that this means that your use of this computer (e.g., browsing history) is accessible to university staff including the researchers in this study. Thus, your use of the computer is not private.

FOR FURTHER INFORMATION

Casey Bevens will be glad to answer your questions about this study at any time. You may contact her at 44 7802 487878 or s1618394@sms.ed.ac.uk. Alternatively, you may contact Dr. Steve Loughnan at steve.loughnan@ed.ac.uk.

INFORMED CONSENT FORM

FACEBOOK CHAT PILOT STUDY

You are being asked to consent to participation in a study about personal preferences and how men and women interact online in the context of early dating and impression formation. This study will require you to complete a set of questionnaires, followed by chatting with a member of the opposite sex on Facebook messenger.

By signing below, you are agreeing that: (1) you have read and understood the Participant Information Sheet, (2) questions about your participation in this study have been answered satisfactorily, (3) you are aware of the potential risks (if any), (4) you are taking part in this research study voluntarily (without coercion), and (5) anonymised data only may be shared in public research repositories.

Signature

Printed Name

Filler Questionnaire Items Used, Facebook Lab Pilot Study 2

“How would you classify yourself? Select the category that best describes your eating habits with regards to animal products.”

Meat lover: I prefer to have meat in all or most of my meals

Omnivore: I eat meat and other animal products like dairy and/or eggs

Semi-Vegetarian or reducitarian: I eat meat, but only on rare occasions or only certain types of meat

Pescatarian: I eat fish and/or seafood, as well as dairy products and eggs, but no other meat

Lacto- or Ovo-Vegetarian: I eat dairy products and/or eggs, but no meat or fish

Strict vegetarian: I eat no animal products, including dairy and eggs, but would not consider myself full “vegan”

Dietary vegan: I eat no animal products, including dairy, eggs, honey, gelatin, etc.

Lifestyle vegan: Never consume any animal products, and avoid all non-food animal products, including leather, silk, wool, cosmetics containing animal ingredients, etc.

“Please rate how much you agree or disagree with the following statements (1=*completely disagree*; 4=*neither agree nor disagree*; 7=*completely agree*)”

- It is only natural to eat meat
- It is unnatural to eat an all plant-based diet
- Our human ancestors ate meat all the time
- Human beings are natural meat-eaters – we naturally crave meat
- It is necessary to eat meat in order to be healthy
- You cannot get all the protein, vitamins, and minerals you need on an all plant-based diet
- Human beings need to eat meat
- A healthy diet requires at least some meat
- Not eating meat is socially unacceptable
- It is abnormal for humans not to eat meat
- Most people I know eat meat
- It is normal to eat meat
- Meat is delicious
- Meat adds so much flavour to a meal it does not make sense to leave it out
- The best tasting food is normally meat-based dish (e.g., steak, chicken breast, grilled fish)
- Meals without meat would just be bland and boring

“Please indicate on a scale of 1-7 (where 1=Not at all and 7=Highly) how much each statement applies to you.”

- I don't want to eat meals without meat
- When choosing food, I virtually always select the meat option
- I can't imagine giving up meat
- I am committed to eating meat
- The best part of most meals is the meat portion
- I would never give up eating meat
- I would not imagine substituting meat from a meal

“When we think about entities in the world, we might feel a moral obligation to show concern for the welfare and interests of some of those entities. Below is a list of entities. Select those that you feel morally obligated to show concern for.”

- Fish
- Squirrel
- Donkey
- Cat
- Snail
- Elephant
- Gorilla
- Chicken
- Monkey
- Snake
- Tiger
- Chinchilla
- Turkey
- Dolphin
- Dog
- Hamster
- Fox
- Spider
- Cow
- Horse
- Pig
- Rabbit
- Duck
- Ant
- Mouse

“Please rate how you are feeling at this very moment, using the emotion terms below.

(1 = Not at all; 4 = Moderately; 7 = Extremely)”

- Tense
- Nervous
- Stressed
- Upset
- Afraid
- Sad
- Depressed
- Angry
- Outraged
- Queasy
- Grossed Out
- Bored
- Calm
- Relaxed
- Serene
- Contented
- Alert
- Excited
- Elated
- Happy
- Pity (for someone or something)
- Sympathy (for someone or something)

Items to assess (verbally) the realism of the scenario at the conclusion of the study:

1. What, if any, aspects of this scenario made you suspicious?
2. Did you believe that this is a real Facebook account?
3. Did you believe that you would be chatting with the owner of this account?
4. Do you think that there are things we could change about what happened today to make this scenario more believable?
5. Were you distressed or uncomfortable at any time while you were participating in this study today?

The Facebook account to be used in this study can be found at:

<https://www.facebook.com/ellie.james.58760608>

All images and information used in the making of this account have the consent of the woman depicted for their use.

Debriefing Form

Thank you for taking the time to complete this study. There exists a growing area of research in psychology concerning the role of objectification in men's behaviour in relation to women. Today's study did not directly look at objectification, but was a pilot study of methodology to be used in future work in this area for a PhD project.

We sought to explore whether men vary in how they respond to the online presentation of a woman who is a stranger to them when they believe themselves to be unobserved. The Facebook account of "Ellie James" does not belong to a real woman. Data for this study was collected by creating a screen capture video of your activity and will be examined in relation to the account of "Ellie James" only. None of your activity outside of the Facebook site, or Facebook related behavior unrelated to the false account will be used for the purposes of the study in any way. Should this data be used in future publication, all video files will be anonymized and identifying information will never be made available in any way. Should you desire, you have the right for all data we would have collected today to be deleted without being viewed or used.

We do not assume that men in general endorse intrusive or objectifying behaviours and attitudes towards women.

Please be assured that the data collected from you today will remain secure and anonymous. Only the researcher will have access to any identifying information during the data collection process. No identifying or personal information will be used in the analysis of this data. Again, should this data be used in publication, all identifying information will be anonymized.

If you have any questions about the research project, please contact Casey Bevens at s1618394@sms.ed.ac.uk or 44 7802 487878. Alternatively, you can contact Dr. Steve Loughnan at steve.loughnan@ed.ac.uk. Thank you again for your time, and for your contribution to this project.

Debrief follow up questions:

1. What, if any, aspects of this scenario made you suspicious?

2. Did you believe that this is a real Facebook account?

3. Did you believe that you would be chatting with the owner of this account?

4. Given that this study had no chatting and a false Facebook account, do you think that there are things we could change about what happened today to make this scenario more believable?

5. Were you distressed or uncomfortable at any time while you were participating in this study today?

Appendix H

Chat Content Pilot Compiled Measures

Comments Pilot Compiled Measures

PARTICIPANT INFORMATION SHEET

PERCEPTIONS OF COMMENTS ONLINE

INVITATION

You are being asked to take part in a research study on how men perceive a series of comments that may be used in future research concerning online interactions. My name is Casey Bevens, and I am a PhD student working under the supervision of Dr. Steve Loughnan. This study is somewhat exploratory in that we seek to gain ratings to validate these materials. The Psychology Research Ethics Committee has approved this study.

WHAT WILL HAPPEN

In this study, you will be asked to respond to questions following the presentation of a series of comments online. Some of these comments may be construed as sexist, while others may not.

TIME COMMITMENT

The study typically takes about 15 minutes.

PARTICIPANTS' RIGHTS

You may decide to stop being a part of the research study at any time without explanation or penalty. You have the right to ask that any data you have supplied to that point be withdrawn/destroyed. You will still be paid for your contribution.

You have the right to omit or refuse to answer or respond to any question that is asked of you.

You have the right to have your questions about the procedures answered (unless answering these questions would interfere with the study's outcome). If you have any questions as a result of reading this information sheet, you should ask the researcher before the study begins.

BENEFITS AND RISKS

Benefits of participating in this study include the chance to help further research and the payment you will receive. There are no known major risks of participating in this study.

COST, REIMBURSEMENT AND COMPENSATION

Your participation in this study is voluntary. You will receive £0.75 in return for your participation.

CONFIDENTIALITY/ANONYMITY

The data we collect do not contain any personal information about you. No one will link the data you provided to identifying information.

FOR FURTHER INFORMATION

Casey Bevens will be glad to answer your questions about this study at any time. You may contact her at 44 7802 487878 or s1618394@sms.ed.ac.uk. You can also contact Dr. Steve Loughnan at steve.loughnan@ed.ac.uk. If you want to find out about the final results of this study, you should contact Casey Bevens in one of these ways.

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INFORMED CONSENT FORM

PERCEPTIONS OF COMMENTS ONLINE

You are being asked to consent to participation in a study about men's perceptions of a series comments.

By clicking continue below, you are agreeing that: (1) you have read and understood the Participant Information Sheet, (2) questions about your participation in this study have been answered satisfactorily, (3) you are aware of the potential risks (if any), (4) you are taking part in this research study voluntarily (without coercion), and (5) anonymised data only may be shared in public research repositories.

Demographics & Instructions:

1. What is your gender (male, female, other, choose not to respond)?
2. What is your sexuality (heterosexual, homosexual, other, choose not to respond)?
3. Are you over the age of 18 (yes, no)?

“Please read the following comments and respond to the items that accompany them. Thank you. “

Comments and Items

Items following each comment:

1. How sexually harassing do you find this comment?
2. How sexist is this comment?
3. How hostile is this comment?

Comments tested:

1. You looks sweet enough to eat.
2. I wonder what our kids would looks like.
3. I wouldn't mind being the reason for your sleepless night.
4. You have to be the true cause of global warming.
5. I don't do one-night stands, but I could make an exception for you.
6. Do you have a fever? You look so damn hot.
7. I like women with your hair color.
8. I like the color of your eyes.
9. Your top in your profile pic is sexy.
10. Your curves make my head spin.
11. Too bad you can't just describe your underwear to me right now.
12. I think I saw you in the city once.
13. You are as cute as a button.
14. You should post more pics where I can see that body.
15. I read a study that kissing makes you happy, and I would love to make you happy.
16. You look nice in your profile pic.
17. If I told you now that you have a great smile you would think I am coming on to you, and you would be right.
18. I think you look like a woman with style.
19. Cool outfit you have there. Can I talk you out of it?
20. You are the kind of bombshell I would like to defuse.
21. Strange, I feel somehow attracted to you. Undressed would not be bad either.
22. You can forget about getting into heaven. It's a sin to be that sweet and sexy.

23. You are like the finest chocolates in the world, and I have just the filling for you.
24. What cloud did you fall from, my angel?
25. I am not for sale, but you can rent me tonight.
26. Did you hurt yourself when you fell from the sky?
27. I think your face has that certain something.
28. You have a nice smile.
29. I like your hairstyle.
30. You have a pretty face.
31. You are a sight for sore eyes.
32. All these curves and me without brakes.
33. That's a pretty (profile) picture. You are pretty photogenic.
34. You have a pretty smile.
35. I'm single. You too?
36. So, you are studying at Edinburgh.
37. Your field of study sounds interesting.
38. You look like someone I would like to talk to.
39. Maybe I will see you around at uni.
40. I think your studies are right for you.
41. I think we have a lot in common.
42. Interesting that you also participated in this study.
43. You make a very smart impression.
44. Maybe I'll meet you outside of the chat.
45. You seem to be a happy person.
46. I would like to get to know you better.
47. You remind me of someone in my circle of acquaintances.(friends)
48. You seem to be an interesting person.
49. You look sympathetic.
50. You look nice.
51. Nice to meet you.
52. I like your clothes.
53. I like your smile.

Debriefing Form

Thank you for taking the time to complete this study. Your responses will be used to help choose stimuli for use in future research concerning online interactions.

There exists variability among men in how they respond to the items you saw today, and we do not assume that men in general endorse sexist or demeaning attitudes towards women, or vice versa. Your participation today will contribute to the literature illuminating individual differences in these types of responses. Please be assured again that all responses you have given today are completely anonymous, and that the researchers have no way of linking them to you at any time.

If you have any questions about the research project, please contact Casey Bevens at s1618394@sms.ed.ac.uk or 44 7802 487878. Thank you again for your time and effort, and for your contribution to this project. You can also contact Dr. Steve Loughnan at steve.loughnan@ed.ac.uk.

Jokes Compiled Measures

PARTICIPANT INFORMATION SHEET

PERCEPTIONS OF JOKES ONLINE

INVITATION

You are being asked to take part in a research study on how men perceive a series of jokes that may be used in future research concerning online interactions. My name is Casey Bevens, and I am a PhD student working under the supervision of Dr. Steve Loughnan. This study is somewhat exploratory in that we seek to gain ratings to validate these materials. The Psychology Research Ethics Committee has approved this study.

WHAT WILL HAPPEN

In this study, you will be asked to respond to questions following the presentation of a series of jokes online. Some of these jokes may be construed as sexist, while others may not.

TIME COMMITMENT

The study typically takes about twenty minutes.

PARTICIPANTS' RIGHTS

You may decide to stop being a part of the research study at any time without explanation or penalty. You have the right to ask that any data you have supplied to that point be withdrawn/destroyed. You will still be paid for your contribution.

You have the right to omit or refuse to answer or respond to any question that is asked of you.

You have the right to have your questions about the procedures answered (unless answering these questions would interfere with the study's outcome). If you have any questions as a result of reading this information sheet, you should ask the researcher before the study begins.

BENEFITS AND RISKS

Benefits of participating in this study include the chance to help further research and the payment you will receive. There are no known major risks of participating in this study.

COST, REIMBURSEMENT AND COMPENSATION

Your participation in this study is voluntary. You will receive £0.75 in return for your participation.

CONFIDENTIALITY/ANONYMITY

The data we collect do not contain any personal information about you. No one will link the data you provided to identifying information.

FOR FURTHER INFORMATION

Casey Bevens will be glad to answer your questions about this study at any time. You may contact her at 44 7802 487878 or s1618394@sms.ed.ac.uk. You can also contact Dr. Steve Loughnan at steve.loughnan@ed.ac.uk. If you want to find out about the final results of this study, you should contact Casey Bevens in one of these ways.

[Page Break]

INFORMED CONSENT FORM

PERCEPTIONS OF JOKES ONLINE

You are being asked to consent to participation in a study about men's perceptions of a series of jokes.

By clicking continue below, you are agreeing that: (1) you have read and understood the Participant Information Sheet, (2) questions about your participation in this study have been answered satisfactorily, (3) you are aware of the potential risks (if any), (4) you are taking part in this research study voluntarily (without coercion), and (5) anonymised data only may be shared in public research repositories.

Demographics & Instructions:

1. What is your gender (male, female, other, choose not to respond)?
2. What is your sexuality (heterosexual, homosexual, other, choose not to respond)?
3. Are you over the age of 18 (yes, no)?

"Please read the following jokes and respond to the items that accompany them. Thank you. "

Jokes about men and items

Items following each joke:

1. How funny do you personally find this joke?
2. How sexist is this joke?
3. How hostile is this joke?
4. How sexually harassing would this joke be for a man?

Jokes about men tested:

1. Why do only 10% of men make it to heaven?
Because if they all went, it would be Hell.
2. Why do men like smart women?
Opposites attract.
3. How are husbands like lawn mowers?
They're hard to get started, they emit noxious odors, and half the time they don't work.
4. How do men define a "50/50" relationship?
We cook-they eat; we clean-they dirty; we iron-they wrinkle.
5. How do men exercise on the beach?
By sucking in their stomachs every time they see a bikini.
6. How do you get a man to stop biting his nails?
Make him wear shoes.
7. How does a man show he's planning for the future?
He buys two cases of beer instead of one.
8. How many men does it take to screw in a light bulb?
ONE.....He just holds it up there and waits for the world to revolve around him.

9. What did God say after creating man?
I can do so much better.
10. What do most men consider a gourmet restaurant?
Any place without a drive-up window.
11. What do you call a man with half a brain?
Gifted.
12. Why is it good that there are female astronauts?
When the crew gets lost in space, the woman will ask for directions.
13. What do you do with a bachelor who thinks he's God's gift to women?
Exchange him.
14. What should you give a man who has everything?
A woman to show him how to work it.
15. What's a man's idea of honesty in a relationship?
Telling you his real name.
16. What's the best way to force a man to do sit-ups?
Put the remote control between his toes.
17. What's the difference between Big Foot and an intelligent man?
Big Foot's been spotted several times.
18. What's the smartest thing a man can say?
"My wife says...."
19. Why are all dumb blonde jokes one-liners?
So men can understand them.
20. Why did God create man before woman?
Because you're always supposed to have a rough draft before creating your masterpiece.
21. Why do female black widow spiders kill the males after mating?
To stop the snoring before it starts.
22. Why do jocks play on artificial turf?
To keep them from grazing.
23. Why do men need instant replay on TV sports?
Because after 30 seconds they forget what happened.

24. Why does it take 100 million sperm to fertilize one egg?
Because not one will stop and ask for directions.

Jokes about women and items

Items following each joke:

1. How funny do you personally find this joke?
2. How sexually harassing would this joke be for a woman?
3. How sexist is this joke?
4. How hostile is this joke?

Jokes about women:

1. When does a woman lose 99% of her intelligence? When her husband dies.
2. What is the difference between an intelligent woman and a yeti? The Yeti has been sighted before.
3. What is a woman in a hydrochloric acid barrel? A solved problem.
4. How do you know that a woman wants to say something meaningful? Her sentence begins with "my husband says..."
5. Why do women have small feet? So they can stand closer to the stove.
6. What is a woman busy with when she is reading a blank sheet of paper? She is studying her rights.
7. What is the plural of woman? Cleaning crew!
8. What do women and clouds have in common? When they clear off the day can be nice again.
9. How many men does it take to open a beer? None. It should be opened when she brings it.
10. What is worse than a chauvinist? A woman who doesn't do as she was ordered.
11. Why do men pass gas more than women? Because women can't shut up long enough to build up the required pressure.
12. If your dog is barking at the back door and your wife is yelling at the front door, who do you let in first? The dog, of course. He'll shut up once you let him in.
13. There are two kinds of women: either she is an angel, or she is still alive.
14. A man goes to a butcher and says: "I would like to have 500g liver sausage. But please from the coarse and, fatty one." The butcher: "Sorry she is at the vocational college today."

15. Why do women always get blamed for accidents? Because they should be in the kitchen.
16. What was the last radiogram/message of the Challenger before it came down? "I let the woman take the wheel..."
17. How many women do you need to change a light bulb? None, she can do the dishes in the dark.
18. What is the difference between a woman who has her period and a terrorist? With a terrorist you can negotiate.
19. What is positive about a woman falling down the steps to the cellar?
She can easily fetch a beer.
20. Why does a woman not need a watch? Because there is always a clock in the kitchen.
21. Why can't women be pretty and intelligent? Because then they would be men.
22. When a man uses his head, he is thinking. When a woman uses her head, she is getting her hair done.
23. Why are there more women than men? Because there is more to clean than to think.
24. What is the most painful when a man undergoes a sex change? His brain being sucked off.
25. I married a Miss Right. I just didn't know her first name was Always.
26. Scientists have discovered a food that diminishes a woman's sex drive by 90%. It's called a Wedding Cake.
27. Why do men die before their wives? They want to.
28. What's the difference between your wife and your dog? Walking the dog is relaxing.
29. What is the difference between a battery and a woman? A battery has a positive side.
30. What have you done wrong when your wife comes out of the kitchen and starts nagging you? Made the chain too long.
31. A man is driving along in his car when he suddenly gets pulled over by the police. The man pokes his head out of the window and says, "What seems to be the problem officer?" The cop looks bluntly at him and says, "Are you aware that a woman fell out of your car about 2 minutes ago?" the man let out a sigh "thank fuck for that! I thought I had gone deaf!"
32. Why did the woman cross the road? Wait, better question, why is she out of the kitchen!?
33. Why don't women need drivers' licenses? There is no road between the bedroom and the kitchen.
34. What do you call a woman with two brain cells? Pregnant.

Neutral Jokes and items

Items following each joke:

1. How funny do you personally find this joke?
2. How sexually harassing would this joke be?
3. How sexist is this joke?
4. How hostile is this joke?

Neutral Jokes:

1. "Waiter what about my liver?" "Am I a doctor?"
2. A survey in a pedestrian area. "Excuse me sir, the reporter asks, what do you think is the biggest problem in our society: insufficient knowledge or lack of interest?" Sir: "I don't know... I don't care..."
3. A man comes into the hospital room and asked: "How tall are you?" The patient: "I'm 5 foot 4 inches, doc:" Man: "I'm not the doc. I'm the undertaker."
4. What's the difference between chopped beef and pea soup? Everyone can chop beef, but not everyone can pea soup!
5. Why don't aliens eat clowns? Because they taste funny.
6. What do you call a fish with no eyes? A fsh
7. Two snowmen are standing in a field. One says to the other: "Funny, I smell carrots too".
8. What do you get when you cross an elephant and a rhino? El-if-i-no
9. Two peanuts walk into a bar. One was a salted.
10. Sam: "Would you punish me for something I didn't do?"- "Teacher: no, of course not." Sam: "Good, because I didn't do my homework."
11. Once upon a time there were two muffins in the microwave. Suddenly, one of the muffins says: "Man it's hot in here!!!!" The other muffin exclaims, "Look a talking muffin!!!!"
12. Soon after our last child left home for college, my husband was resting next to me on the couch with his head in my lap. I carefully removed his glasses. "You know, honey," I said sweetly, "Without your glasses you look like the same handsome young man I married." "Honey," he replied with a grin, "Without my glasses, you look pretty good, too!"
13. What do you call a sheep with no legs? A cloud
14. Q: What time do ducks wake up in the morning? A: At the quack of dawn.
15. A snail walks into a bar and the barman tells him there's a strict policy about having snails in the bar and so kicks him out. A year later the same snail re-enters the bar and asks the barman "What did you do that for?"

16. Patient: "Doc could you help me?" Doc: "Hmm, perhaps you should bath more." Patient: "Do you think this will help me?" Doc: "No, but you'll get used to the wet earth."
17. What do you get when you cross a pit-bull terrier with a collie? A dog that bites off your leg first and then gets help.
18. Judge: "I know you from somewhere! I have seen you a thousand times! You are surely previously convicted!" Defendant: "No, I'm the doorman from the sex shop..."
19. A robbery in the student hostel. "Hands up! I'm looking for money!" "One moment we'll look with you!"
20. The customs officer bows his head to look through the window of a car and asks: "alcohol, cigarettes?" The driver shakes his head: "no, thanks, but two coffees please!"
21. A new teacher is trying to make use of her Psychology courses. She starts her class by saying, "Everyone who thinks you're stupid, stand up. After a few seconds, little Johnny stood up. The teacher said, "Do you think you're stupid, Johnny?" "No, ma'am," he says, but I hate to see you standing there all by yourself."
22. A guy goes into a grocery store and buys a gallon of milk, a loaf of bread, and a pound of bacon. He takes it up to the checkout aisle and the young lady who rings him out says "Wow, you must be single." The man replies "Yes. How did you know?" The cashier says, "Because you're ugly."
23. What's the difference between a teacher and a train? The teacher tells the student to spit the gum out and the train says, "chew chew".
24. "Doctor! I have a serious problem; I can never remember what I just said. When did you first notice this problem?" "What problem?"
25. You have to stay in shape. My grandmother started walking five miles a day when she was 60. She's 97 today and we don't know where the hell she is.
26. Why don't oysters give to charity? Because they're shellfish.
27. Teacher: Maria please point to America on the map. Maria: This is it. Teacher: Well done. Now class, who found America? Class: Maria did.
28. A: Aren't you wearing your wedding ring on the wrong finger? B: Yes I am, I married the wrong woman.
29. A: Did you hear that a baby was fed on elephant's milk and gained twenty pounds in a week. B: That's impossible. Whose baby? A: An elephant's.

30. When I was young, I didn't like going to weddings. My grandmother would tell me, "You're next" However, she stopped doing that after I started saying the same thing to her at funerals.
31. Patient: Doctor, will I be able to play the piano after the operation?
Doc: Yes, of course. Patient: Great! I never could before!
32. Q: What do you call a hippie's wife? A: Mississippi
33. Q: What did the ocean say to the beach? A: Nothing, it just waved!
34. Q: Can a kangaroo jump higher than the Empire State Building? A:
Yes, because the Empire State Building can't jump!

Debriefing Form

Thank you for taking the time to complete this study. Your responses will be used to help choose stimuli for use in future research concerning online interactions.

There exists variability among men in how they respond to the items you saw today, and we do not assume that men in general endorse sexist or demeaning attitudes towards women, or vice versa. Your participation today will contribute to the literature illuminating individual differences in these types of responses. Please be assured again that all responses you have given today are completely anonymous, and that the researchers have no way of linking them to you at any time.

If you have any questions about the research project, please contact Casey Bevens at s1618394@sms.ed.ac.uk or 44 7802 487878. Thank you again for your time and effort, and for your contribution to this project. You can also contact Dr. Steve Loughnan at steve.loughnan@ed.ac.uk.

Critical Trials (10)

Trial Group 1

Sexist (Female) Joke (17)

How many women do you need to change a light bulb?
None, she can do the dishes in the dark.

Sexist Comment (14)

You should post more pics where I can see that body.

Neutral Joke (1)

"Waiter what about my liver?"
"Am I a doctor?"

Neutral Comment (52)

I like your clothes.

Trial Group 2

Sexist (Female) Joke (9)

How many men does it take to open a beer?
None. It should be opened when she brings it.

Sexist Comment (23)

You are like the finest chocolates in the world, and I have just the filling for you.

Neutral Joke (11)

Once upon a time there were two muffins in the microwave. Suddenly, one of the muffins says: "Man it's hot in here!!!!" The other muffin exclaims, "Look a talking muffin!!!!"

Neutral Comment (8)

I like the color of your eyes.

Trial Group 3

Sexist (Female) Joke (2)

What is the difference between an intelligent woman and a yeti?
The Yeti has been sighted before.

Sexist Comment (21)

Strange, I feel somehow attracted to you. Undressed would not be bad either.

Neutral Joke (3)

A man comes into the hospital room and asked: "How tall are you?"

The patient: "I'm 5 foot 4 inches, doc."

Man: "I'm not the doc. I'm the undertaker."

Neutral Comment (46)

I would like to get to know you better.

Trial Group 4

Sexist (Female) Joke (12)

If your dog is barking at the back door and your wife is yelling at the front door,

who do you let in first? The dog, of course. He'll shut up once you let him in.

Sexist Comment (19)

Cool outfit you have there. Can I talk you out of it?

Neutral Joke (13)

What do you call a sheep with no legs? A cloud

Neutral Comment (43)

You make a very smart impression.

Trial Group 5

Sexist (Female) Joke (18)

What is the difference between a woman who has her period and a terrorist?

With a terrorist you can negotiate.

Sexist Comment (25)

I am not for sale, but you can rent me tonight.

Neutral Joke (32)

Q: What do you call a hippie's wife?

A: Mississippi

Neutral Comment (53)

I like your smile.

Trial Group 6

Sexist (Female) Joke (26)

Scientists have discovered a food that diminishes a woman's sex drive by 90%.

It's called a Wedding Cake.

Sexist Comment (15)

I read a study that kissing makes you happy, and I would love to make you happy.

Neutral Joke (2)

A survey in a pedestrian area. "Excuse me sir, the reporter asks, what do you think is the biggest problem in our society: insufficient knowledge or lack of interest?" Sir: "I don't know... I don't care..."

Neutral Comment (49)

You look sympathetic.

Trial Group 7

Sexist (Female) Joke (31)

A man is driving along in his car when he suddenly gets pulled over by the police. The man pokes his head out of the window and says, "What seems to be the problem officer?" The cop looks bluntly at him and says, "Are you aware that a woman fell out of your car about 2 minutes ago?" the man let out a sigh "thank fuck for that! I thought I had gone deaf!"

Sexist Comment (9)

Your top in your profile pic is sexy.

Neutral Joke (34)

Q: Can a kangaroo jump higher than the Empire State Building?

A: Yes, because the Empire State Building can't jump!

Neutral Comment (50)

You look nice.

Trial Group 8

Sexist (Female) Joke (25)

My mate married a Miss Right.

He just didn't know her first name was Always.

Sexist Comment (26)

Did you hurt yourself when you fell from the sky?

Neutral Joke (27)

Teacher: Maria please point to America on the map.

Maria: This is it.

Teacher: Well done. Now class, who found America?

Class: Maria did.

Neutral Comment (29)

I like your hairstyle.

Trial Group 9

Sexist (Female) Joke (27)

Why do men die before their wives? They want to.

Sexist Comment (24)

What cloud did you fall from, my angel?

Neutral Joke (29)

A: Did you hear that a baby was fed on elephant's milk and gained twenty pounds in a week. B: That's impossible. Whose baby?

A: An elephant's.

Neutral Comment (42)

Interesting that you also participated in this study.

Trial Group 10

Sexist (Female) Joke (28)

What's the difference between your wife and your dog?

Walking the dog is relaxing.

Sexist Comment (6)

Do you have a fever? You look so damn hot.

Neutral Joke (23)

What's the difference between a teacher and a train? The teacher tells the student to spit the gum out and the train says, "chew chew".

Neutral Comment (41)

I think we have a lot in common.

Non-Critical Trials (4)

Group 1a

Sexist (male) Joke (24)

Why does it take 100 million sperm to fertilize one egg?

Because not one will stop and ask for directions.

Neutral Joke (14)

Q: What time do ducks wake up in the morning?

A: At the quack of dawn.

Group 2a

Sexist (male) Joke (19)

Why are all dumb blonde jokes one-liners?

So men can understand them.

Neutral Joke (7)

Two snowmen are standing in a field.

One says to the other: "Funny, I smell carrots too".

Group 1b

Neutral Joke (10)

Sam: "Would you punish me for something I didn't do?"

Teacher: "no, of course not."

Sam: "Good, because I didn't do my homework."

Neutral Comment (37)

Your field of study sounds interesting.

Group 2b

Neutral Joke (19)

A robbery in the student hostel.

"Hands up! I'm looking for money!"

"One moment we'll look with you!"

Neutral Comment (36)

So, you are studying at Edinburgh.

Appendix I

Video Validations Pilots 1-3 Compiled Materials & Measures

Video Validation Pilot 1 Compiled Materials & Measures

PARTICIPANT INFORMATION SHEET

VIDEO STIMULI VALIDATION STUDY

INVITATION

You are being asked to take part in a research study to examine how people perceive and respond to a short video clip of a woman. My name is Casey Bevens, and I am a PhD student working under the supervision of Dr. Steve Loughnan. This study is a pilot project aiming to validate stimuli for use in other PhD studies. The Psychology Research Ethics Committee has approved this study.

WHAT WILL HAPPEN

In this study, you will view a short video clip depicting a woman introducing herself, after which you will be asked to respond to a set of questionnaires.

TIME COMMITMENT

The study typically takes about five minutes.

PARTICIPANTS' RIGHTS

You may decide to stop being a part of the research study at any time without explanation or penalty. You have the right to ask that any data you have supplied to that point be withdrawn/destroyed. You will still be compensated for your contribution.

You have the right to omit or refuse to answer or respond to any question that is asked of you.

You have the right to have your questions about the procedures answered (unless answering these questions would interfere with the study's outcome). If you have any questions as a result of reading this information sheet, you should ask the researcher before the study begins by contacting me at s1618394@sms.ed.ac.uk. Alternatively, you can contact Dr. Steve Loughnan at steve.loughnan@ed.ac.uk.

BENEFITS AND RISKS

Benefits of participating in this study include the chance to help validate stimuli that can be used in future research, and the payment you will receive. There are no known major risks of participating in this study.

COST, REIMBURSEMENT AND COMPENSATION

Your participation in this study is voluntary. You will receive £0.50 in return for your participation.

CONFIDENTIALITY/ANONYMITY

The data we collect do not contain any personal information about you. No one will link the data you provided to identifying information.

FOR FURTHER INFORMATION

Casey Bevens will be glad to answer your questions about this study at any time. You may contact her at 44 7802 487878 or s1618394@sms.ed.ac.uk.

Alternatively, you can contact the supervisor for this project, Dr. Steve Loughnan at steve.loughnan@ed.ac.uk.

If you want to find out about the final results of this study, you should contact Casey Bevens in one of these ways.

[Page Break]

INFORMED CONSENT FORM

You are being asked to consent to participation in a study that involves responding to questionnaires about a short video depiction of a woman.

By clicking to continue below, you are agreeing that: (1) you have read and understood the Participant Information Sheet, (2) questions about your participation in this study have been answered satisfactorily, (3) you are aware of the potential risks (if any), (4) you are taking part in this research study voluntarily (without coercion), and (5) anonymised data only may be shared in public research repositories.

Demographics & Instructions:

1. Please Indicate your gender below (male, female, other, choose not to respond)
2. Please indicate your sexual orientation (heterosexual, homosexual, bisexual, asexual, other, choose not to respond)

“Please take a moment to view the video below. **Make sure that you view with the sound turned on.**”

*unobtrusive page timing used

Link to Control Video Used: <https://osf.io/qkh28/>

Link to Sexualized Video Used: <https://osf.io/5a2bk/>

Items Following video presentation:

1. Did you watch the video? (yes, no)
2. Did you watch the video with the sound on? (yes, no)
3. How sexy do you consider the woman in the video to be? (1, *Not at all sexy*; 5, *Very sexy*)

Ratings of human nature and human uniqueness, scaled from 1 (*Not at all*) to 7 (*Very much so*), Bastian, et al. (2012):

“Rate the extent to which the woman in the video:”

Human Nature items:

- Is open minded and can think clearly about things
- Is emotional, responsive, and warm
- *Is mechanical and cold, like a robot
- *Is superficial and has no depth

Human Uniqueness items:

- Is refined and cultured
- Is rational, logical, and intelligent
- *Lacks self-restraint, like an animal
- *Is unsophisticated

*Reverse scored

Ratings of warmth, competence, morality, scaled from 1 (*Not at all*)- 7 (*Very much so*), Leach, et al., (2007):

“Rate the extent to which the woman in the video is:”

- Honest
- Sincere
- Trustworthy
- Likeable
- Warm
- Friendly
- Competent
- Intelligent
- Skilled

Modified Self-Objectification Questionnaire, or Other-Objectification Questionnaire (OOQ; Strelan & Hargreaves, 2005)

“This section is concerned with how people think about women's bodies. Listed below are 10 different body attributes. When you think about the woman in the video, which of these body attributes do you think is most important? I would like you to rank the attributes in order from what you think is most important to what you think is least important.

Please consider all the attributes simultaneously and record your answers by ranking the items in the boxes next to each one.

Remember, 1= most important, 2= next most important... 10= least important.”

Attributes:

- Physical Coordination
- Health
- Weight
- Strength
- Sex Appeal
- Physical Attractiveness
- Energy Level (e.g. Stamina)
- Firm/Sculpted Muscles
- Physical Fitness Level
- Measurements (e.g. Chest, Waist, Hips)

Debriefing Form

Thank you for taking the time to complete this study. There exists a growing area of research in psychology concerning objectification and its consequences. The current study aims to validate a set of videos that were created to be used in future research on this topic.

Please be assured again that all responses you have given today are completely anonymous, and that the researchers have no way of linking them to you at any time.

If you have any questions about the research project, please contact Casey Bevens at s1618394@sms.ed.ac.uk or 44 7802 487878. Alternatively, you can contact the supervisor for this project, Dr. Steve Loughnan, at steve.loughnan@ed.ac.uk. Thank you again for your time and effort, and for your contribution to this project.

Video Validation Pilot 2 Compiled Materials & Measures

PARTICIPANT INFORMATION SHEET

VIDEO STIMULI VALIDATION STUDY

INVITATION

You are being asked to take part in a research study to examine how people perceive and respond to a short video clip of a woman. My name is Casey Bevens, and I am a PhD student working under the supervision of Dr. Steve Loughnan. This study is a pilot project aiming to validate stimuli for use in other PhD studies. The Psychology Research Ethics Committee has approved this study.

WHAT WILL HAPPEN

In this study, you will view a short video clip depicting a woman introducing herself, after which you will be asked to respond to a set of questionnaires.

TIME COMMITMENT

The study typically takes about five minutes.

PARTICIPANTS' RIGHTS

You may decide to stop being a part of the research study at any time without explanation or penalty. You have the right to ask that any data you have supplied to that point be withdrawn/destroyed. You will still be compensated for your contribution.

You have the right to omit or refuse to answer or respond to any question that is asked of you.

You have the right to have your questions about the procedures answered (unless answering these questions would interfere with the study's outcome). If you have any questions as a result of reading this information sheet, you should ask the researcher before the study begins by contacting me at s1618394@sms.ed.ac.uk. Alternatively, you can contact Dr. Steve Loughnan at steve.loughnan@ed.ac.uk.

BENEFITS AND RISKS

Benefits of participating in this study include the chance to help validate stimuli that can be used in future research, and the payment you will receive. There are no known major risks of participating in this study.

COST, REIMBURSEMENT AND COMPENSATION

Your participation in this study is voluntary. You will receive £0.50 in return for your participation.

CONFIDENTIALITY/ANONYMITY

The data we collect do not contain any personal information about you. No one will link the data you provided to identifying information.

FOR FURTHER INFORMATION

Casey Bevens will be glad to answer your questions about this study at any time. You may contact her at 44 7802 487878 or s1618394@sms.ed.ac.uk. Alternatively, you can contact the supervisor for this project, Dr. Steve Loughnan at steve.loughnan@ed.ac.uk.

If you want to find out about the final results of this study, you should contact Casey Bevens in one of these ways.

[Page Break]

INFORMED CONSENT FORM

You are being asked to consent to participation in a study that involves responding to questionnaires about a short video depiction of a woman.

By clicking to continue below, you are agreeing that: (1) you have read and understood the Participant Information Sheet, (2) questions about your participation in this study have been answered satisfactorily, (3) you are aware of the potential risks (if any), (4) you are taking part in this research study voluntarily (without coercion), and (5) anonymised data only may be shared in public research repositories.

Demographics & Instructions:

1. Please Indicate your gender below (male, female, other, choose not to respond)
2. Please indicate your sexual orientation (heterosexual, homosexual, bisexual, asexual, other, choose not to respond)

“Please take a moment to view the video below. **Be sure to watch with the sound turned on.**”

*unobtrusive page timing used

Link to Control Video Used: <https://osf.io/79wa5/>

Link to Sexualized Video Used: <https://osf.io/xbm6j/>

Items Following video presentation:

4. Did you watch the video? (yes, no)
5. Did you watch the video with the sound on? (yes, no)
6. How sexy do you consider **the woman in the video** to be? (1, *Not at all sexy*; 5, *Very sexy*)

Ratings of human nature and human uniqueness, scaled from 1 (*Not at all*) to 7 (*Very much so*), Bastian, et al. (2012):

“Rate the extent to which **the woman in the video**:”

Human Nature items:

- Is open minded and can think clearly about things
- Is emotional, responsive, and warm
- *Is mechanical and cold, like a robot
- *Is superficial and has no depth

Human Uniqueness items:

- Is refined and cultured
- Is rational, logical, and intelligent
- *Lacks self-restraint, like an animal
- *Is unsophisticated

*Reverse scored

Ratings of warmth, competence, morality, scaled from 1(*Not at all*)- 7 (*Very much so*), Leach, et al. (2007):

“Rate the extent to which you think **the woman in the video** is:”

- Honest
- Sincere
- Trustworthy
- Likeable
- Warm
- Friendly
- Competent
- Intelligent
- Skilled

Modified Self-Objectification Questionnaire, or Other-Objectification Questionnaire (OOQ; Strelan & Hargreaves, 2005)

“This section is concerned with how people think about women's bodies. Listed below are 10 different body attributes. **When you think about the woman in the video**, which of these body attributes do you think is most important?

Please rank the attributes in order from what you think is most important to what you think is least important. Consider all the attributes simultaneously and record your answers by ranking the items in the boxes next to each one.

Remember, 1= most important, 2= next most important... 10= least important.”

Attributes:

- Physical Coordination
- Health
- Weight
- Strength
- Sex Appeal
- Physical Attractiveness
- Energy Level (e.g. Stamina)
- Firm/Sculpted Muscles
- Physical Fitness Level
- Measurements (e.g. Chest, Waist, Hips)

Debriefing Form

Thank you for taking the time to complete this study. There exists a growing area of research in psychology concerning objectification and its consequences. The current study aims to validate a set of videos that were created to be used in future research on this topic.

Please be assured again that all responses you have given today are completely anonymous, and that the researchers have no way of linking them to you at any time.

If you have any questions about the research project, please contact Casey Bevens at s1618394@sms.ed.ac.uk or 44 7802 487878. Alternatively, you can contact the supervisor for this project, Dr. Steve Loughnan, at steve.loughnan@ed.ac.uk. Thank you again for your time and effort, and for your contribution to this project.

Video Validation Pilot 3 Compiled Materials & Measures

PARTICIPANT INFORMATION SHEET

VIDEO STIMULI VALIDATION STUDY

INVITATION

You are being asked to take part in a research study to examine how people perceive and respond to a short video clip of a woman. My name is Casey Bevens, and I am a PhD student working under the supervision of Dr. Steve Loughnan. This study is a pilot project aiming to validate stimuli for use in other studies. The Psychology Research Ethics Committee has approved this study.

WHAT WILL HAPPEN

In this study, you will view a short video clip depicting a woman introducing herself, after which you will be asked to respond to a set of questionnaires.

TIME COMMITMENT

The study typically takes about five minutes.

PARTICIPANTS' RIGHTS

You may decide to stop being a part of the research study at any time without explanation or penalty. You have the right to ask that any data you have supplied to that point be withdrawn/destroyed. You will still be compensated for your contribution.

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You have the right to have your questions about the procedures answered (unless answering these questions would interfere with the study's outcome). If you have any questions as a result of reading this information sheet, you should ask the researcher before the study begins by contacting me at s1618394@sms.ed.ac.uk. Alternatively, you can contact Dr. Steve Loughnan at steve.loughnan@ed.ac.uk.

BENEFITS AND RISKS

Benefits of participating in this study include the chance to help validate stimuli that can be used in future research, and the payment you will receive. There are no known major risks of participating in this study.

COST, REIMBURSEMENT AND COMPENSATION

Your participation in this study is voluntary. You will receive £2 in return for your participation.

CONFIDENTIALITY/ANONYMITY

The data we collect do not contain any personal information about you. No one will link the data you provided to identifying information.

FOR FURTHER INFORMATION

Casey Bevens will be glad to answer your questions about this study at any time. You may contact her at 44 7802 487878 or s1618394@sms.ed.ac.uk.

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Demographics & Instructions:

3. Please Indicate your gender below (male, female, other, choose not to respond)
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*unobtrusive page timing used

Link to Control Video Used: <https://osf.io/79wa5/>

Link to Sexualized Video Used: <https://osf.io/xbm6j/>

Items Following video presentation:

7. Did you watch the video? (yes, no)
8. Did you watch the video with the sound on? (yes, no)
9. How sexy do you consider **the woman in the video** to be? (1, *Not at all sexy*; 5, *Very sexy*)

Ratings of human nature and human uniqueness, scaled from 1 (*Not at all*) to 7 (*Very much so*), Bastian, et al. (2012):

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- Sex Appeal
- Physical Attractiveness
- Energy Level (e.g. Stamina)
- Firm/Sculpted Muscles
- Physical Fitness Level
- Measurements (e.g. Chest, Waist, Hips)

Debriefing Form

Thank you for taking the time to complete this study. There exists a growing area of research in psychology concerning objectification and its consequences. The current study aims to validate a set of videos that were created to be used in future research on this topic.

Please be assured again that all responses you have given today are completely anonymous, and that the researchers have no way of linking them to you at any time.

If you have any questions about the research project, please contact Casey Bevens at s1618394@sms.ed.ac.uk or 44 7802 487878. Alternatively, you can contact the supervisor for this project, Dr. Steve Loughnan, at steve.loughnan@ed.ac.uk. Thank you again for your time and effort, and for your contribution to this project.

Appendix J

Lab Study Procedural Protocol

Preliminary Portion

When contacted, direct participants to the preliminary questionnaire. When they have completed this, schedule an appointment for them to come into the lab.

Email text used:

“Hi,

Thanks very much for your interest.

In order to start the study, there is an initial personality questionnaire, and this can be accessed via the link below. Once you have completed this questionnaire, the final page will give you instructions on how to sign up for the main lab part of the study. Please be aware that you need to have an active Facebook account to participate.

[Link here]

Thank you again,

Casey Bevens”

Email text used once they have completed the initial portions and contacted researcher to set up a lab appointment:

“Hi,

Thank you for taking the time to complete Part 1 of this study. In order to sign up for a time to come to the lab for Part 2, please follow the link below.

[Doodle poll link here]

Thank you,
Casey Bevens”

Confirmation of appointment email text:

“Hi,

This email is to confirm that you have signed up to participate in the lab at 7 George Square on [date] at [time]. Please meet me at the chairs just past the entrance that have a sign indicating they are for meeting research participants.

I will send you a reminder email the day before.

Thanks again,
Casey Bevens”

Reminder email text:

“Hi,

This email is a reminder you that you have an appointment to participate in Part 2 of the lab study you signed up for at 7 George Square tomorrow. Please meet me at the chairs just past the entrance, which are marked with a sign indicating they are for meeting research participants.

Thank you,
Casey Bevens”

Lab Portion

1. Set up lab:

- a. Close another cubicle and set to engaged
- b. Have Facebook login page open in minimized browser
- c. Have Ellie James account open on computer in other testing room
- d. Have four-minute timer ready
- e. open the PDF of participant instructions
- f. turn on screen record right before going to collect participant

2. Collect them and note that their partner has already arrived (given ten-minute wait time maximum)

3. Give informed consent; Assign the anonymous identifier.

4. Give them an overview of what to expect: tell them there are **three parts to this study**: a first impressions rating using the profile photos they both provided, a compatibility task questionnaire, and a chat interaction. Give a brief explanation of each.

5. First impressions:

- a. Tell them they will first complete the first impression ratings of their partner based only on the profile picture provided, and that she will be completing these ratings with the photo they provided. Get them started via the link in the PDF instructions and have them come collect you when they reach the end of the section. Go into other cubicle and speak out loud to “their partner,” for the benefit of them hearing.

6. **Facebook Intrusive behavior paradigm-**

- a. When they come get you, tell them they are going to get the woman started on the compatibility task first because the survey software requires that you stagger who begins first, but that they can set up for the chat.
- b. have them login to Facebook and friend request her account
- c. Tell them you are going to go get partner to accept friend request and started on compatibility task, and that after about five minutes you will come back and get them started on it.
- d. Go into other room, accept request, talk out loud to “partner,” and start four-minute timer.

7. **“Compatibility task”**: Come back in after four minutes and have them complete the surveys via the link in PDF instructions. Tell them to come get you when they reach the end of that section.

8. **Chat paradigm-**

- a. Tell them they have been randomly assigned to the role of “sender” and that their choices are limited, as are the receivers. Give a general verbal overview of what to do and answer any questions they have.
- b. Give them one of 14 instruction sets (quasi-randomization) that will walk them through the process to read and tell them they can start whenever they are ready.
- c. Tell them to come get you when they have finished

9. **Final Measures**: Tell them there is no partner and give mini-debrief verbally. Tell them that screen capture was used to collect some data and verify that they are comfortable with this. Specifically tell them that the next section deals with sensitive topics, including sex and sexual aggression, and ask them if they are ok to go on. Tell them to come get you when they are done.

Have them complete the final questionnaires via link in second PDF.

10. **Pay** them, give **debrief** form, and ask if they have any comments or questions.

11. After they have left:

- a. Stop screen recording and download video data.
- b. Clear all browser history.
- c. Reset lab.

Appendix K

Online Interactions Lab Study Compiled Measures

MyCareerHub Advertisement content for participant recruitment

£12 for 30-minute PhD lab study in psychology- Looking for MALE participants!

Organization:

[University of Edinburgh](#) - Research Study Participation

Position title:

£12 for 30-minute PhD lab study in psychology- Looking for MALE participants!

Added:

2 October 2018

Application close:

14 December 2018

Commences:

Immediately

Contract Type

Temporary

Contract Hours

Casual

Remuneration/ Pay rate:

£12

Location:

Edinburgh

Details

Please email Casey Bevens, PhD student, s1618394@ed.ac.uk, to sign up for this study.

Once I you have contacted the researcher, you will be asked complete a preliminary questionnaire, and then sign up for a time to come into the lab.

This study is based in social psychology and is about how men and women interact online. It takes approximately 30 minutes in total. The study has been approved by the University of Edinburgh PPLS ethics committee and includes participation in a preliminary questionnaire to be completed before coming into the lab.

Participants will be paid an initial £2 for completing the preliminary questionnaire, signing up for a lab appointment, and showing up to that lab appointment (at 7 George Square). They will then receive £10 for completing the lab portion of the study, totaling £12 in payment.

Application procedures

Please email the primary researcher at the following address for more information and to sign up for this study.

s1618394@ed.ac.uk OR cbevans@ed.ac.uk

Preliminary Questionnaire Information and Consent forms

PARTICIPANT INFORMATION SHEET AND CONSENT

PERSONALITY, ONLINE COMMUNICATIONS & INTERACTIONS, AND EARLY IMPRESSION FORMATION (PART 1)

This preliminary questionnaire will be solely about your own personality characteristics. The main part of this study is concerning personality compatibility, online interactions, and early impression formation.

INVITATION

You are being asked to take part in a research study on personality characteristics.

WHAT WILL HAPPEN

In this study, you will be asked to complete a series of personality questionnaires about yourself. You will then make an appointment with the researcher to come into the lab, for which you will be asked to provide your current Facebook profile photo.

In the lab, you will make first impression ratings of a partner of the opposite sex, based on the current Facebook profile photo they provided. You will then be asked to login to your Facebook account and accept a friend request from your partner. After completing a compatibility task and further scales concerning personal preferences, the pair of you will engage in a chatting activity using Facebook messenger. Following this, you will be asked to complete final scales about your impressions of your partner.

At this time, you will only be asked to complete a series of personality questionnaires.

TIME COMMITMENT

This section of the study typically takes less than ten minutes. The lab section of this study typically takes about twenty-five minutes.

PARTICIPANTS' RIGHTS

You may decide to stop being a part of the research study at any time without explanation or penalty. You have the right to ask that any data you have supplied to that point be withdrawn/destroyed. You will still receive payment for your contribution.

You have the right to have your questions about the procedures answered (unless answering these questions would interfere with the study's outcome). If you have any questions as a result of reading this information sheet, you should ask the researcher before the study begins.

BENEFITS AND RISKS

Benefits of participating in this study include the chance to help further the understanding of human interactions, and the payment you will receive. There are no known major risks of participating in this study.

COST, REIMBURSEMENT AND COMPENSATION

Your participation in this study is voluntary. You will receive £2 for completing the pre-lab questionnaire items and making the follow up appointment to come into the lab, and £10 in return for your participation in the lab setting, totaling £12.

CONFIDENTIALITY/ANONYMITY

The data we collect today will contain identifying information about you, however, no one will have access to this information at any time outside of the research team. Should this data lead to publication, **all** identifying information will be anonymized.

FOR FURTHER INFORMATION

Casey Bevens will be glad to answer your questions about this study at any time. You may contact her at 44 7802 487878 or s1618394@sms.ed.ac.uk. Alternatively, you may contact Dr. Steve Loughnan at steve.loughnan@ed.ac.uk.

[Page Break]

INFORMED CONSENT FORM

You are being asked to consent to participation in a study about personal preferences and how men and women interact online in the context of early dating and impression formation. This study will require you to complete a set of questionnaires online about yourself at this time.

At the end of this portion of the study you will be asked to make an appointment with the researcher for part 2.

By entering your name below, you are agreeing that: (1) you have read and understood the Participant Information Sheet, (2) questions about your participation in this study have been answered satisfactorily, (3) you are aware of the potential risks (if any), (4) you are taking part in this research study voluntarily (without coercion), and (5) anonymised data only may be shared in public research repositories.

Please enter your name here to indicate consent

Preliminary Survey Items

- Please indicate your gender below. (male, female, other, choose not to respond)
- Please indicate your sexual orientation below (heterosexual, homosexual, bisexual, asexual, other, prefer not to say)

Narcissism

“Please indicate how much you agree with each of the following statements.”

- People see me as a natural leader
- I hate being the center of attention
- Many group activities tend to be dull without me.
- I know that I am special because everyone keeps telling me so.
- I like to get acquainted with important people.
- I feel embarrassed if someone compliments me
- I have been compared to famous people.
- I am an average person
- I insist on getting the respect I deserve

Psychopathy

“Please indicate how much you agree with each of the following statements.”

- I like to get revenge on authorities
- I avoid dangerous situations
- Payback needs to be quick and nasty
- People often say I’m out of control
- It’s true that I can be mean to others
- People who mess with me always regret it
- I have never gotten in trouble with the law
- I enjoy having sex with people I hardly know.
- I’ll say anything to get what I want.

Masculine Contingency

“Please indicate the extent to which you agree or disagree with each of the following statements.”

- I can’t respect myself if I don’t live up to what it means to be a “real man.”
- My self-respect would be threatened if I didn’t consider myself macho.
- My self-worth suffers if I think my manhood is lacking.
- I can’t respect myself if I don’t behave like a “real man.”

- I would feel worthless if I acted like “less than a man”

Conformity to Masculine Norms

“The following section contains a series of statements about how men might think, feel or behave. The statements are designed to measure attitudes, beliefs, and behaviors associated with both traditional and non-traditional masculine gender roles. Thinking about your own actions, feelings and beliefs, please indicate how much you personally agree or disagree with each statement based on the scale indicated. There are no right or wrong responses to the statements. You should give the responses that most accurately describe your personal actions, feelings and beliefs. It is best if you respond with your first impression when answering.”

- If I could, I would frequently change sexual partners
- I believe that violence is never justified
- In general, I do not like risky situations
- I enjoy taking risks
- I am disgusted by any type of violence
- I would only have sex if I was in a committed relationship
- I take risks.
- Sometimes violent action is necessary
- In general, I control the women in my life
- I would feel good if I had many sexual partners
- I frequently put myself in risky situations
- Women should be subservient to men
- I am willing to get into a physical fight if necessary
- Violence is almost never justified
- I am happiest when I’m risking danger
- It would be enjoyable to date more than one person at a time
- No matter what the situation I would never act violently
- Things tend to be better when men are in charge
- I love it when men are in charge of women

General Curiosity

- How curious a person do you consider yourself to be?

Ambivalent Sexism- Hostile sexism

“Below is a series of statements concerning men and women and their relationships in contemporary society. Please indicate the degree to which you agree or disagree with each statement using the scale indicated.”

- Many women are actually seeking special favors, such as hiring policies that favor them over men, under the guise of asking for "equality."
- Most women interpret innocent remarks or acts as being sexist.
- Women are too easily offended.
- Feminists are not seeking for women to have more power than men.
- Most women fail to appreciate fully all that men do for them.
- Women seek to gain power by getting control over men
- Women exaggerate problems they have at work.
- Once a woman gets a man to commit to her, she usually tries to put him on a tight leash.
- When women lose to men in a fair competition, they typically complain about being discriminated against.
- There are actually very few women who get a kick out of teasing men by seeming sexually available and then refusing male advances.
- Feminists are making entirely reasonable demands of men.

Social Desirability

"Please indicate the extent to which you agree with each of the following on the scale provided."

- Would you smile at people every time you meet them?
- Do you always practice what you preach to people?
- If you say to people that you will do something, do you always keep your promise no matter how inconvenient it might be?
- Would you ever lie to people?

Preliminary Portion Debrief

Debriefing Form

Thank you for taking the time to complete PART 1 of this study!

IN ORDER TO RECEIVE PAYMENT FOR PART 1 and CONTINUE TO THE MAIN STUDY, please email the researcher at s1618394@ed.ac.uk OR cbevans@ed.ac.uk with the following information:

- 1. The name you provided upon consenting to this study**
- 2. Your current Facebook profile photo**
- 3. Your bank details for transfer of the initial payment** (alternatively you can receive full payment in cash at the lab appointment)

Once I receive your email, you will be contacted to set a time to come into the lab. Thank you.

Please be assured that the data collected from you today will remain secure and anonymous. Only the researcher will have access to any identifying information during the data collection process. No identifying or personal information will be used in the analysis of this data. Again, should this data be used in publication, all identifying information will be anonymized.

If you have any questions about the research project, please contact Casey Bevans at s1618394@ed.ac.uk or 44 7802 487878. Alternatively, you can contact Dr. Steve Loughnan at steve.loughnan@ed.ac.uk. Thank you again for your time, and for your contribution to this project.

PARTICIPANT INFORMATION SHEET AND CONSENT

PERSONALITY, ONLINE COMMUNICATIONS & INTERACTIONS, AND EARLY IMPRESSION FORMATION

This is a study concerning personality compatibility, online interactions, and early impression formation.

INVITATION

You are being asked to take part in a research study on personality characteristics and how men and women interact online.

WHAT WILL HAPPEN

In this study, you will be asked to complete a series of personality questionnaires about yourself prior to coming into the lab. You will then make an appointment with the researcher to come into the lab, for which you will be asked to provide your current Facebook profile photo and a basic description of yourself. In the lab, you will make first impression ratings of a partner of the opposite sex, based on the current Facebook profile photo they provided. You will then be asked to login to your Facebook account and accept a friend request from your partner. After completing a compatibility task and further scales concerning personal preferences, the pair of you will engage in a chatting activity using Facebook messenger. Following this, you will be asked to complete final scales about your impressions of your partner.

TIME COMMITMENT

The pre-lab section of this study typically takes less than ten minutes. The lab section of this study typically takes about forty-five minutes.

PARTICIPANTS' RIGHTS

You may decide to stop being a part of the research study at any time without explanation or penalty. You have the right to ask that any data you have supplied to that point be withdrawn/destroyed. You will still receive payment for your contribution.

You have the right to have your questions about the procedures answered (unless answering these questions would interfere with the study's outcome). If you have any questions as a result of reading this information sheet, you should ask the researcher before the study begins.

BENEFITS AND RISKS

Benefits of participating in this study include the chance to help further the understanding of human interactions, and the payment you will receive. There are no known major risks of participating in this study.

COST, REIMBURSEMENT AND COMPENSATION

Your participation in this study is voluntary. You will receive £2 for completing the pre-lab questionnaire items and making the follow up appointment to come into the lab, and £10 in return for your participation in the lab setting, totaling £12.

CONFIDENTIALITY/ANONYMITY

The data we collect today will contain identifying information about you, however, no one will have access to this information at any time outside of the research team. Should this data lead to publication, ***all*** identifying information will be anonymized.

In this study you are using a university computer. Please remember that this means that your use of this computer (e.g., browsing history) is accessible to university staff including the researchers in this study. Thus, your use of the computer is not private.

FOR FURTHER INFORMATION

Casey Bevens will be glad to answer your questions about this study at any time. You may contact her at 44 7802 487878 or s1618394@sms.ed.ac.uk. Alternatively, you may contact Dr. Steve Loughnan at steve.loughnan@ed.ac.uk.

INFORMED CONSENT FORM

FACEBOOK CHAT STUDY

You are being asked to consent to participation in a study about personal preferences and how men and women interact online in the context of early dating and impression formation. This study will require you to complete a set of questionnaires online about yourself. This will be followed by an in-person session that will be scheduled with the researcher and will involve chatting with a member of the opposite sex on Facebook messenger, as well as the completion of additional scales.

By signing below, you are agreeing that: (1) you have read and understood the Participant Information Sheet, (2) questions about your participation in this study have been answered satisfactorily, (3) you are aware of the potential risks (if any), (4) you are taking part in this research study voluntarily (without coercion), and (5) anonymised data only may be shared in public research repositories.

Signature

Printed Name

Facebook Lab Study Participant Instructions

1. First Impressions Section:

a. Follow this link:

[link here]

2. Compatibility Section:

a. Follow this link:

[link here]

3. Chat Section:

a. Go get the researcher when you have completed the compatibility section in order to receive further instructions.

Items & Instructions- "First Impressions" Section

"This section of the study is about initial impression formation. Like you, your partner has provided their current Facebook profile photo, and we are asking each of you to rate the other on various attributes based only on the photos you have provided."

"Please Enter your anonymous identifier below."

[Page Break]

"Below is the current Facebook profile photo provided by your study partner. Please take a moment to consider any initial impressions you may have of this person."

Image used:



[Page Break]

Ratings of warmth, competence, morality, scaled from 1 (*Not at all*)- 7 (*Very much so*), Leach, et al. (2007):

[image shown at top of page]

"Rate the extent to which this person is:"

- Honest
- Sincere
- Trustworthy
- Likeable
- Warm
- Friendly
- Competent

- Intelligent
- Skilled

Ratings of human nature and human uniqueness, scaled from 1 (*Not at all*) to 7 (*Very much so*), Bastian, et al. (2012):

[image shown at top of page]

“Rate the extent to which this person:”

Human Nature items:

- Is open minded and can think clearly about things
- Is emotional, responsive, and warm
- *Is mechanical and cold, like a robot
- *Is superficial and has no depth

Human Uniqueness items:

- Is refined and cultured
- Is rational, logical, and intelligent
- *Lacks self-restraint, like an animal
- *Is unsophisticated

*Reverse scored

[Image shown at top of page]

“This section is concerned with how people think about bodies. Listed below are 10 different body attributes. When you think about the person above which of these body attributes do you think is most important? Rank the attributes in order from what you think is most important to what you think is least important.

Please Consider all the attributes simultaneously and record your answers by ranking the items in the boxes next to each one.

Remember, 1= most important, 2= next most important... 10= least important.”

- _____ Physical Coordination (1)
- _____ Health (2)
- _____ Weight (3)
- _____ Strength (4)
- _____ Sex Appeal (5)
- _____ Physical Attractiveness (6)
- _____ Energy Level (e.g. Stamina) (7)
- _____ Firm/Sculpted Muscles (8)
- _____ Physical Fitness Level (9)
- _____ Measurements (e.g. Chest, Waist, Hips) (10)

“Thank you for completing this section of the survey. Please let the researcher know when you are done.”

Items & Instructions: "Compatibility Task"

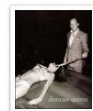
"In this section, you will complete one image choice task, and one series of questionnaires."

"Please enter your anonymous identifier below"

[Page Break]

"The following is a compatibility task. You and your partner will independently view a series of image sets, each containing three images. You will each be asked to select one of the three images in each set that you would like to share with the other person. We will calculate the number of times the two of you choose the same image in order to assign you a score of general compatibility. This score, along with the images you choose, will be shared with your partner at the end of the study."

"Compatibility task"(modified RBA) images used:



Sexually Violent Image thumbnails



N1



N2



N3



N4



N5



N6



N7



N8



N9



N10



N11



N12



N13



N14



N15



N16



N17

Neutral image thumbnails



Violent image thumbnails

Filler Scale Items

“How would you classify yourself? Select the category that best describes your eating habits with regards to animal products.”

Meat lover: I prefer to have meat in all or most of my meals

Omnivore: I eat meat and other animal products like dairy and/or eggs

Semi-Vegetarian or reducitarian: I eat meat, but only on rare occasions or only certain types of meat

Pescatarian: I eat fish and/or seafood, as well as dairy products and eggs, but no other meat

Lacto- or Ovo-Vegetarian: I eat dairy products and/or eggs, but no meat or fish

Strict vegetarian: I eat no animal products, including dairy and eggs, but would not consider myself full “vegan”

Dietary vegan: I eat no animal products, including dairy, eggs, honey, gelatin, etc.

Lifestyle vegan: Never consume any animal products, and avoid all non-food animal products, including leather, silk, wool, cosmetics containing animal ingredients, etc.

“Please rate how much you agree or disagree with the following statements (1=completely disagree; 4=neither agree nor disagree; 7=completely agree)”

- It is only natural to eat meat
- It is unnatural to eat an all plant-based diet
- Our human ancestors ate meat all the time
- Human beings are natural meat-eaters – we naturally crave meat
- It is necessary to eat meat in order to be healthy
- You cannot get all the protein, vitamins, and minerals you need on an all plant-based diet
- Human beings need to eat meat
- A healthy diet requires at least some meat
- Not eating meat is socially unacceptable
- It is abnormal for humans not to eat meat
- Most people I know eat meat
- It is normal to eat meat
- Meat is delicious
- Meat adds so much flavour to a meal it does not make sense to leave it out
- The best tasting food is normally meat-based dish (e.g., steak, chicken breast, grilled fish)
- Meals without meat would just be bland and boring

“Please indicate on a scale of 1-7 (where 1=Not at all and 7=Highly) how much each statement applies to you.”

- I don't want to eat meals without meat
- When choosing food, I virtually always select the meat option
- I can't imagine giving up meat
- I am committed to eating meat
- The best part of most meals is the meat portion
- I would never give up eating meat
- I would not imagine substituting meat from a meal

“When we think about entities in the world, we might feel a moral obligation to show concern for the welfare and interests of some of those entities. Below is a list of entities. Select those that you feel morally obligated to show concern for.”

- Fish
- Squirrel
- Donkey
- Cat
- Snail
- Elephant
- Gorilla
- Chicken
- Monkey
- Snake
- Tiger
- Chinchilla
- Turkey
- Dolphin
- Dog
- Hamster
- Fox
- Spider
- Cow
- Horse
- Pig
- Rabbit
- Duck
- Ant
- Mouse

“Please rate how you are feeling at this very moment, using the emotion terms below.

(1 = Not at all; 4 = Moderately; 7 = Extremely)”

- Tense
- Nervous
- Stressed
- Upset
- Afraid
- Sad
- Depressed
- Angry
- Outraged
- Queasy
- Grossed Out
- Bored
- Calm
- Relaxed
- Serene
- Contented
- Alert
- Excited
- Elated
- Happy
- Pity (for someone or something)
- Sympathy (for someone or something)

“Once you have completed this task and set of questionnaires, let the researcher know, and you will be given further instructions.”

Chat Instructions

Sender

Please read these instructions and follow each step carefully!

In this section, you will interact with your partner via Facebook messenger. You will be limited to sending *images* which consist of various pre-determined *comments* and *jokes*. In each “round,” you will send one comment or joke of your choice, and your partner will only be able to respond using the thumbs up or thumbs down response of their choice. There will be 14 “rounds,” and in each of these you will have 2-4 comments/jokes to choose from.

To begin:

- Verify that you are now friends with your study partner on Facebook.
- Look on the righthand side of the desktop, where you will see a folder labeled “Chat Options.”
- Open this folder, and you will see 14 folders labeled “Group 1”- “Group 14.”

Don’t open these yet. In each of these folders are your groups of choices for the 14 rounds, but you will **NOT GO IN NUMERICAL ORDER**. The order you will access the group folders are below.

- First, open folder ____ [number ranging from 1-14] ____.
- Open the images if you are unable to read the thumbnail versions.
- Choose the image you would like to share with your partner.
- Drag and drop your choice into messenger and hit send.
- Wait for a response (it will be a thumbs up or thumbs down).

Repeat this process, opening the remaining **group folders**. Open them in any random order, as long as it is not sequential. Cross each number off as you go to help keep track.

| | | | | |
|----|----|----|----|----|
| 2 | 3 | 4 | 5 | 6 |
| 7 | 8 | 9 | 10 | 11 |
| 12 | 13 | 14 | | |

Chat Item Choices:

All items were created by putting the jokes and comments on power-point slides, and then converting these to images. The images were labelled within their given folders in a randomized way unrelated to their content. Grouping was based on the chat content pilot.

Chat Images:

Group 1 (Folder 1)

How many women do you need to change a light bulb?

None, she can do the dishes in the dark.

You should post more pics where I can see that body.

“Waiter what about my liver?”

“Am I a doctor?”

I like your clothes.

I like the colour of your eyes.

**Once upon a time there were two
muffins in the microwave.**

**Suddenly, one of the muffins says:
"Man it's hot in here!!!!"**

**The other muffin exclaims, "Look a
talking muffin!!!!"**

You are like the finest chocolates in the world, and I have just the filling for you

How many men does it take to open a beer?

None. It should be opened when she brings it.

Group 3 (Folder 3)

**A man comes into the hospital room
and asked: "How tall are you?"**

The patient: "I'm 5 foot 4 inches, doc:"

**Man: "I'm not the doc. I'm the
undertaker."**

**What is the difference between an
intelligent woman and a yeti?**

The Yeti has been sighted before.

**Strange, I feel somehow
attracted to you.**

**Undressed would not be
bad either.**

**I would like to get to
know you better.**

Group 4 (Folder 4)

You make a very smart impression.

Cool outfit you have there. Can I talk you out of it?

**If your dog is barking at the back door
and your wife is yelling at the front door,
who do you let in first?**

**The dog, of course. He'll shut up once
you let him in.**

What do you call a sheep with no legs?

A cloud.

Group 5 (Folder 5)

**I am not for sale,
but you can rent me tonight.**

I like your smile.

**What is the difference between a woman
who has her period and a terrorist?**

With a terrorist you can negotiate.

Q: What do you call a hippie's wife?

A: Mississippi

A survey in a pedestrian area:

“Excuse me sir, the reporter asks, what do you think is the biggest problem in our society: insufficient knowledge or lack of interest?”

Sir: “I don’t know... I don’t care...”

Scientists have discovered a food that diminishes a woman's sex drive by 90%.

It's called a Wedding Cake.

You look sympathetic.

**I read a study that kissing makes you happy,
and I would love to make you happy.**

Group 7 (Folder 7)

**Q: Can a kangaroo jump higher than
the Empire State Building?**

**A: Yes, because the Empire State
Building can't jump!**

You look nice.

A man is driving along in his car when he suddenly gets pulled over by the police. The man pokes his head out of the window and says "What seems to be the problem officer?"

The cop looks bluntly at him and says "Are you aware that a woman fell out of your car about 2 minutes ago?"

The man let out a sigh "thank fuck for that! I thought I had gone deaf!"

Your top in your profile pic is sexy.

Group 8 (Folder 8)

I like your hairstyle.

**Did you hurt yourself when you
fell from the sky?**

Teacher: "Maria please point to America on the map."

Maria: "This is it."

Teacher: "Well done. Now class, who found America?"

Class: "Maria did."

My mate married Miss Right.

**He just didn't know her first
name was Always.**

Group 9 (Folder 9)

Why do men die before their wives?

They want to.

A: Did you hear that a baby was fed on elephant's milk and gained twenty pounds in a week?

B: That's impossible. Whose baby?

A: An elephant's.

What cloud did you fall from, my angel?

Interesting that you also participated in this study.

I think we have a lot in common.

**What's the difference between a teacher
and a train?**

**The teacher tells the student to spit the
gum out, and the train says "chew chew".**

Do you have a fever? You look so damn hot.

**What's the difference
between a wife and a dog?**

Walking the dog is relaxing.

**Why does it take 100 million sperm
to fertilize one egg?**

Because not one will stop and ask for directions.

Q: What time do ducks wake up in the morning?

A: At the quack of dawn.

Two snowmen are standing in a field.

**One says to the other:
"Funny, I smell carrots too."**

Why are all dumb blonde jokes one-liners?

So men can understand them.

Your field of study sounds interesting.

**Sam: "Would you punish me
for something I didn't do?"**

Teacher: "no, of course not."

Sam: "Good, because I didn't do my homework."

So you are studying at Edinburgh.

A robbery in the student hostel.

“Hands up! I’m looking for money!”

“One moment we’ll look with you!”

Final Questionnaire Items & Instructions

“In this section you will be asked to respond to a series of questionnaires in relation to the woman in the fake account, Ellie James. Please respond as closely to as you would if this were the real account of a stranger.”

“Please enter your anonymous identifier below”

[Page Break]

End of survey instructions: “Thank you for completing this study. Please let the researcher know that you have reached the end of this section.”

ASAI

“People frequently think about different activities even if they never do them. For each kind of activity listed, please indicate your thoughts in relation to the woman you thought you were partnered with, Ellie James, according to the scale provided.”

Scale: 1, *Very unattractive*; 5, *Very attractive*

In relation to the woman on Facebook, do you find the idea of:

- Rape
- Forcing her to do something sexual she didn't want to do

Scale: 1, *Less than 20%*; 2, *Between 20% and 40%*; 3, *Between 40% and 60%*; 4, *Between 60% and 80%*; 5, *Between 80% and 100%*

In relation to the woman on Facebook, what percentage of *males* do you think would find the following activities sexually arousing?

- Rape
- Forcing her to do something sexual she didn't want to do

Scale: 1, *Very unattractive*; 5, *Very attractive*

How attractive do you think the woman on Facebook would find the following activities:

- Rape
- Being forced to do something sexual she didn't want to do
- Forcing a male to do something sexual he didn't want to do

Scale: 1, *Very un-arousing*; 5, *Very arousing*

How sexually arousing do you think *you would find* the following sexual activities if you engaged in them with the woman from Facebook?

- Rape
- Forcing her to do something sexual she didn't want to do
- Being forced to do something sexual you didn't want to do

Scale: 1, *Not at all likely*; 5, *Certainly likely*

If you could be assured that no one would know and that you could in no way be punished for engaging in the following acts, how likely, if at all, would you be to commit such acts with the woman from Facebook?

- Rape
- Forcing her to do something sexual she didn't want to do

ARVS

“Imagine that you see an online newspaper article which states that the woman you thought you were partnered with for this study, Ellie James, was raped. For the following items, please indicate the extent to which you agree or disagree with each statement about her.”

- The raped woman is a less desirable woman.
- The extent of the woman’s resistance should be the major factor in determining if a rape has occurred.
- *The raped woman is an innocent victim.
- The woman may be claiming rape to protect her reputation.
- *Even if the woman is a “good” girl she was as likely to be raped as “bad” girls.
- Since the woman has had prior sexual relationships, she should not complain about rape.
- *The woman did not provoke rape by their appearance or behavior.
- It did that woman good to be raped.
- *Even if the woman felt guilty about engaging in premarital sex, it is not likely she would falsely claim rape.
- This woman secretly desired to be raped.
- *Any female may be raped.
- If this woman was raped while accepting a ride from a stranger, she got what she deserved.
- This woman may have invented her rape story if she had learned she was pregnant.
- *The man, not the woman, was responsible for her rape.
- If this woman went out alone at night, she put herself in a position to be raped.
- The woman may have claimed rape if she consented to sexual relations but changed her mind afterwards.
- *The woman should not blame herself for rape.
- Since this woman is healthy, she should have been able to successfully resist a rapist if she really tried.
- This woman may have been lying in reporting the rape because she was angry or wanted revenge on the accused.
- *Even if the woman was wearing a short skirt or tight blouse, she was not inviting rape.
- The woman may have put herself in a situation in which she was likely to be sexually assaulted because she had an unconscious wish to be raped.

- This woman was not really damaged by rape because she is sexually experienced.
- If this woman was raped, she deserved it.
- If the woman was intoxicated, it must mean she was willing to have sexual relations.

*Reverse scored

LSH

“On the pages that follow you will find 9 brief scenarios that describe 9 different interactions between males and females. In each case you will be asked to imagine that you are the main male character in the scenario, and that the woman from Facebook, Ellie James, is the female character.

Then you will be asked to rate how likely it is that you would perform each of several different behaviors in the described social context. Assume in each scenario that no matter what you choose to do, nothing bad would be likely to happen to you as result of your action. Try to answer each question as honestly as you can. Your answers will be completely anonymous. No one will ever try to discover your identity, no matter what you say on the questionnaire.” (all items scaled: 1, *Not at all likely*- 5, *Very likely*)

[Page Break]

“Imagine that you are an executive in a large corporation. You are 42 years old. Your income is above average for people at your job level. You have had numerous job offers from other companies. You feel very secure in your job. One day your personal secretary decides to quit her job and you have the task of replacing her. The personnel department sends several applicants over for you to interview. All seem to be equally qualified for the job. One of the applicants, Ellie James, explains during her interview that she desperately needs the job. She is 23 years old, single and has been job hunting for about a month. You find yourself very attracted to her. She looks at you in a way that possibly conveys she is also attracted to you. How likely are you to do the following things in this situation?”

- Would you give her the job over other applicants?
- Assuming that you are secure enough in your job that no possible reprisals could happen to you, would you offer her the job in exchange for sexual favors?
- Assuming that you fear no reprisals on your job, would you ask her to meet you later for dinner to discuss her possible employment?

“Imagine that you are the owner and manager of an expensive restaurant. One day, while going over the receipts, you discover that one of the waitresses, Ellie James, has made some errors in her checks. She has undercharged several customers. The mistake costs you \$100. In talking to some of the other employees, you find that the particular customers involved were friends of the waitress. You call her into your office and ask her to explain her behavior. The waitress confesses to having intentionally undercharged her friends. She promises that she will never repeat this dishonest act and tells you that she will do anything to keep her job. The waitress is someone you have always found particularly attractive. She is a

divorcee and about 25 years old. How likely are you to do the following things in this situation?"

- Would you let her keep her job?
- Would you let her keep her job in exchange for sexual favors?
- Would you ask her to meet you for dinner after work to discuss the problem?

"Imagine that you are the manager of a shipping company. One day your supervisor asks you to study the possibility of buying several computers for the office. You call up several competing companies that sell computers. Each company sends a sales representative over to your office who describes the company's products. A salesperson from company "A" calls you and asks to come to your office. You agree and the next day Ellie James shows up. She can offer no real reason for buying her company's products over those of the other companies. However, she seems very sexy. How likely are you to do the following things in this situation?"

- Would you recommend her line of computers?
- Assuming that you are secure enough in your job that no possible reprisals could happen to you, would you agree to recommend her line of computers in exchange for sexual favors?
- Assuming that you are secure enough in your job that no possible reprisals could happen to you, would you ask her to meet you later for dinner to discuss the choice of computers?

"Imagine that you are the owner of a modeling agency. Your agency specializes in sexy female models used in television commercials. One of your models, Ellie James, is a particularly ravishing brunette. You stop her after work one day and ask her to have dinner with you. She coldly declines your offer and tells you that she would like to keep your relationship with her "strictly business." A few months later you find that business is slack, and you have to lay off some of your employees. You can choose to lay off Ellie or one of four other women. All are good models, but someone has to go. How likely are you to do the following things in this situation?"

- Would you fire Ellie?
- Assuming that you are unafraid of possible reprisals, would you offer to let Ellie keep her job in return for sexual favors?
- Would you ask Ellie to dinner so that you could talk over her future employment?

"Imagine that you are a college professor. You are 38 years old. You teach in a large midwestern university. You are a full professor with tenure. You are renowned in your field (Abnormal Psychology) and have numerous offers for other jobs. One day following the return of an examination to a class, a

female student (Ellie James) stops in your office. She tells you that her score is one point away from an "A" and asks you if she can do some extra credit project to raise her score. She tells you that she may not have a sufficient grade to get into graduate school without the "A." Several other students have asked you to do extra credit assignments and you have declined to let them. This particular woman is a stunning brunette. She sits in the front row of the class every day and always wears short skirts. You find her extremely sexy. How likely are you to do the following things in this situation?"

- Would you let her carry out a project for extra credit (e.g. write a paper)?
- Assuming that you are very secure in your job and the university has always tolerated professors who make passes at students, would you offer the student a chance to earn extra credit in return for sexual favors?
- Assuming that you are very secure in your job and the university has always tolerated professors who make passes at students, would you ask her to join you for dinner to discuss the possible extra credit assignments?

"Imagine that you are a college student at a large Midwestern university. You are a junior who just transferred from another school on the East coast. One night at a bar you meet an attractive female student named Ellie James. Ellie laments to you that she is failing a course in English Poetry. She tells you that she has a paper due next week on the poet, Shelley, and fears that she will fail since she has not begun to write it. You remark that you wrote a paper last year on Shelley at your former school. Your paper was given an A+. She asks you if you will let her use your paper in her course. She wants to just retype it and put her name on it. How likely are you to do the following things in this situation?"

- Would you let Ellie use your paper?
- Would you let Ellie use your paper in exchange for sexual favors?
- Would you ask Ellie to come to your apartment to discuss the matter?

"Imagine that you are the editor for a major publishing company. It is your job to read new manuscripts of novels and decide whether they are worthy of publication. You receive literally hundreds of manuscripts per week from aspiring novelists. Most of them are screened by your subordinates and thrown in the trash. You end up accepting about one in a thousand for publication. One night you go to a party. There you meet a very attractive woman named Ellie James. Ellie tells you that she has written a novel and would like to check into getting it published. This is her first novel. She is a

dental assistant. She asks you to read her novel. How likely are you to do the following things in this situation?"

- Would you agree to read Ellie's novel?
- Would you agree to reading Ellie's novel in exchange for sexual favors?
- Would you ask Ellie to have dinner with you the next night to discuss your reading her novel?

"Imagine that you are a physician. You go over to the hospital one day to make your rounds visiting your patients. In looking over the records of one of your patients, you discover that one of the attending nurses on the previous night shift made an error in administering drugs to your patient. She gave the wrong dosage of a drug. You examine the patient and discover that no harm was actually done. He seems fine. However, you realize that the ramifications of the error could have been catastrophic under other circumstances. You pull the files and find out who made the error. It turns out that a new young nurse named Ellie James was responsible. You have noticed Ellie in some of your visits to the hospital and have thought of asking her out to dinner. You realize that she could lose her job if you report this incident. How likely are you to do each of the following things?"

- Would you report Ellie to the hospital administration?
- Assuming that you fear no reprisals, would you tell Ellie in private that you will not report her if she will have sex with you?
- Assuming that you fear no reprisals, would you ask Ellie to join you for dinner to discuss the incident?

"Imagine that you are the news director for a local television station. Due to some personnel changes you have to replace the anchor woman for the evening news. Your policy has always been to promote reporters from within your organization when an anchor woman vacancy occurs. There are several female reporters from which to choose. All are young, attractive, and apparently qualified for the job. One reporter, Ellie James, is someone whom you personally find very sexy. You initially hired her, giving her a first break in the TV news business. How likely are you to do the following things in this situation?"

- Would you give Ellie the job?
- Assuming that you fear no reprisals in your job, would you offer Ellie the job in exchange for sexual favors?
- Assuming that you fear no reprisals in your job, would you ask her to meet you after work for dinner to discuss the job?

Debriefing Form

Thank you for taking the time to complete this study! There exists a growing area of research in psychology concerning the role of objectification in men's behaviour in relation to women. Today's study looked at how men respond to the presentation of a woman online and sought to explore how men vary in their responses to the online presentation of a woman who is a stranger to them.

The Facebook account of "Ellie James" does not belong to a real woman. Data for this study was collected in part by creating a screen capture video of your activity and will be examined in relation to the account of "Ellie James" only. None of your online activity outside of the Facebook site, or Facebook related behavior unrelated to the false account will be used for the purposes of the study in any way, apart from the responses you provided specifically for this study. Should this data be used in future publication, all video files will be anonymized and identifying information will never be made available in any way. Should you desire, you have the right for all data we would have collected today to be deleted without being viewed or used.

We do not assume that men in general endorse intrusive or objectifying behaviours and attitudes towards women.

Please be assured that the data collected from you today will remain secure and anonymous. Only the researcher will have access to any identifying information during the data collection process. No identifying or personal information will be used in the analysis of this data. Again, should this data be used in publication, all identifying information will be anonymized.

If you have any questions about the research project, please contact Casey Bevens at s1618394@sms.ed.ac.uk or 44 7802 487878. Alternatively, you can contact Dr. Steve Loughnan at steve.loughnan@ed.ac.uk. Thank you again for your time, and for your contribution to this project.

Appendix L

Video Data Coding Guidelines (Main Study)

Within 4 min period from time friend request is accepted by Ellie

Points assigned for:

1. **Pre:** sum of all the following behaviors prior to friend request being accepted
2. **Request.Bubbles:** Scrolling/Checking out info on request page (scrolling over name to see more such that info bubble or post pops up; not counting opening chat window), without entering profile itself- 1 per pop up
3. **Enter.Count:** Entering the profile or returning to the profile main page- 1 per time
4. **Main.Bubbles:** Scrolling over for pop up bubbles on main profile pages- 1 per pop up
5. **Active.Time.Count:** Every ten full consecutive seconds spent actively on a given page within the profile (scrolling etc.)- 1
6. **Distance.Count:** Every five posts past when scrolling (downwards); doesn't have to be within ten seconds as above, but does have to be consecutive- 1
7. **Page.Change.Count:** Changing pages within the profile (including opening a timeline post, such as a meme)- 1 per page change
8. **Images.Count:** Accessing Individual Images including profile pic images of Ellie; it does count again if they return to the same image more than once- 1
9. **Bikini.Count:** Accessing bikini images count; this will be by directly clicking the featured photo that involves a bikini-1

Online Interactions Lab Study Additional Analyses

Additional Exploratory Analyses

Limited Sample Analyses.

Intrusive Behavior Paradigm.

Primary Time. The sample was reduced to include only those men who engaged in intrusive behavior (excluding those who did nothing) during the primary time ($n = 33$, Intrusive behavior primary time $M = 8.71$). Exploratory regression models were run for this group using each predictor variable regressed on intrusive behavior primary time. These models were all non-significant ($ps > .08$), with the exception of competence ($b = -2.80$, 95% CI $[-5.37, -0.23]$, $S.E. = 1.26$, $\beta = -.37$, $p = 0.034$, Adj. $R^2 = .11$). All Bayes factors, including that for competence, represented inconclusive evidence for the null (ranging from 0.72- 0.92), with the exception of objectification ($B_{H(0, 1.46)} = 0.10$) which represented moderate evidence for the null.

Full Time. The sample was reduced to include only those men who engaged in intrusive behavior (excluding those who did nothing) during the full time ($n = 37$, Intrusive behavior full time $M = 9.47$), and exploratory regression models were run for this group using each predictor. Intrusive behavior during the full time was marginally predicted by warmth ($b = -4.08$, 95% CI $[-8.08, -0.08]$, $S.E. = 1.97$, $\beta = -.33$, $p = .046$, Adj. $R^2 = .08$), and

significantly predicted by competence ($b = -4.61$, 95% CI $[-7.44, -1.78]$, $S.E. = 1.39$, $\beta = -.49$, $p = .002$, Adj. $R^2 = .22$). All other models were insignificant ($ps > .92$), and Bayes factors for all models ranged from 0.67 (representing inconclusive evidence for the null), to 0.14 (representing moderate evidence for the null in the case of objectification).

Rape Behavior Analogue.

When the sample was reduced to include only those men who engaged in some behavior of choosing sexually aggressive images during the RBA ($n = 54$, RBA percentage $M = 20.76$), exploratory regression models were all non-significant ($ps > .117$), with the exception of the model for warmth, $b = -4.44$, 95% CI $[-7.98, -0.90]$, $S.E. = 1.77$, $\beta = -.33$, $p = .015$, Adj. $R^2 = .09$. However, Bayes factors for all models were inconclusive, ranging from 0.97 (inconclusive evidence in favour of the null), to 1.34 (inconclusive evidence in favour of the alternative).

Chat Paradigm.

Gender Harassment. The sample was reduced to include only those men who engaged in some joke sending behavior during the chat ($n = 35$, gender harassment $M = 18.57$). Under these conditions, none of the exploratory models wherein each predictor was regressed on gender harassment were significant ($ps > .117$). Bayes factors ranged from 0.56 (representing inconclusive evidence for the null), to 1.01 (representing inconclusive evidence for the alternative).

Unwanted Sexual Attention. The sample was reduced to include only those men who engaged in some comment sending behavior during the chat ($n = 32$, unwanted sexual attention $M = 15.00$). Under these conditions, none of the exploratory models wherein each predictor was regressed on unwanted sexual attention were significant ($ps > .549$). Bayes factors ranged from 0.27 (representing moderate evidence for the null in the case of objectification), to 1.00 (representing inconclusive evidence for the alternative).

Overall. The sample was reduced to include only those men who engaged in some combined joke and/or comment sending behavior during the chat ($n = 49$, chat overall $M = 23.06$). Under these conditions, none of the exploratory models wherein each predictor was regressed on the overall chat behaviors were significant ($ps > .290$). Bayes factors ranged from 0.35 (representing inconclusive evidence for the null), to 1.00 (representing inconclusive evidence for the alternative).

Logistic Regression Analyses.

Intrusive Behavior Paradigm. In further exploratory analyses, intrusive behavior was treated as a categorical outcome variable, and logistic regression models were run with each predictor. For the primary time, none of these models were significant ($ps > .09$). For the full-time models, warmth significantly predicted engagement in intrusive behavior, but this was in the opposite direction of our expectations ($b = .57$, $S.E. = .26$, $p = .026$, Odds Ratio = 1.76, 95% CI [1.07, 2.91]).

Rape Behavior Analogue. When the RBA was treated as a categorical outcome with logistic regression models run for each predictor, morality significantly predicted choosing sexually aggressive images, and this was in the predicted direction ($b = -.61$, $S.E. = .26$, $p = .019$, Odds Ratio = 0.54, 95% CI [0.32, 0.90]). Objectification also significantly predicted choosing sexually aggressive images, although this was in the opposite direction of expectations ($b = -.07$, $S.E. = .03$, $p = .005$, Odds Ratio = 0.93, 95% CI [0.89, 0.98]). No other models were significant ($ps > .09$).

Chat Paradigm. When chat behavior was treated as a categorical outcome variable within logistic regression models for each predictor, there were no significant models for jokes ($ps > .08$), comments ($ps > .31$), or overall chat behavior ($ps > .19$).

Other Additional Analyses.

Combined Harassment (Chat Overall). We also combined the percentage scores for sending both jokes and comments, and the frequency distribution for sending *any* type of harassing content can be broken down as follows: 31.1 percent of men ($n = 23$) sent no harassing content, 23 percent of men ($n = 17$) sent harassing content ten percent of the time, another 23 percent of men ($n = 17$) sent harassing content for twenty percent of the critical trials, 5.4 percent of men ($n = 4$) sent harassing material for thirty percent of critical trials, 10.8 percent of men ($n = 8$) sent something harassing forty percent of the time, and 4.3 percent of men ($n = 3$) sent harassing content fifty percent of the time or more. Thus, on average men

sent harassing content in 15.69 percent of critical trials. The chat overall was correlated with several other outcome measures (the RBA, chat jokes, chat comments, and unfavorable attitudes towards rape victims). It was not correlated with any predictors, but it was correlated with the control variables of narcissism and hostile sexism.

Our exploratory regression models (Table A12) showed inconclusive evidence for the null in all cases (Bayes factors ranging from 0.37-0.99).

Once again only behavior which occurred *after* the first instance was included in analyses. The frequency distribution indicated that 64.9 percent of men ($n = 48$) sent no harassing jokes or comments under these conditions, 14.9 percent of men ($n = 11$) sent one additional harassing joke or comment after receiving negative feedback, 9.5 percent ($n = 7$) sent two additional jokes and/or comments, 5.4 percent of men ($n = 4$) sent three more harassing jokes and/or comments following initial feedback, and 1.4 percent sent either 4 ($n = 1$) or 5 ($n = 1$) additional jokes and/or comments. The pattern of correlations remained similar under these conditions, with some limitations: among the outcome variables, the overall chat was correlated with chat jokes, chat comments, and unfavorable attitudes towards rape victims. It was not correlated with any predictors, and only correlated with narcissism among the controls. Exploratory regression models with the limited range of combined joke and comment behavior regressed on each predictor variable were all non-significant ($ps > .45$); Bayes factors ranged

from 0.27 (representing moderate evidence for the null) to 1.00 (representing inconclusive evidence for the alternative).

Table A12.

Exploratory Linear Regression Models, Chat Overall

| | Model 1 | | | Model 2 | | | Model 3 | | |
|--|---------|----------------------------|------|---------|----------------------------|-------|---------|----------------------------|------|
| Predictor Variable Tested | β | b | t | β | b | t | β | b | t |
| 1. Human Nature | -.01 | -.12 | -.07 | | | | | | |
| 2. Human Uniqueness | | | | -.13 | -1.82 | -1.13 | | | |
| 3. Morality | | | | | | | -.11 | -1.50 | -.94 |
| F | | .01 | | | 1.29 | | | .89 | |
| $df(df_{error})$ | | 1(70) | | | 1(70) | | | 1(70) | |
| <i>Adjusted R</i> ² | | -.01 | | | .01 | | | -.01 | |
| 95% CI b (lower, upper) | | -3.85, 3.61 | | | -5.01, 1.38 | | | -4.65, 1.66 | |
| <i>Bayes Factor</i> _{H(0, scale of theory)} | | 0.99 _{H(0, 0.03)} | | | 0.98 _{H(0, 0.03)} | | | 0.99 _{H(0, 0.03)} | |
| BF RR | | 1 ⁻⁶ , 5.25 | | | 1 ⁻⁸ , 2.25 | | | 1 ⁻⁷ , 2.5 | |
| | Model 4 | | | Model 5 | | | Model 6 | | |
| | β | b | t | β | b | t | β | b | t |
| 4. Warmth | -.11 | -1.77 | -.96 | | | | | | |
| 5. Competence | | | | -.13 | -1.85 | -1.12 | | | |
| 6. Objectification | | | | | | | -.09 | -.13 | -.77 |
| F | | .93 | | | 1.25 | | | .59 | |
| $df(df_{error})$ | | 1(70) | | | 1(70) | | | 1(67) | |
| <i>Adjusted R</i> ² | | -.01 | | | .01 | | | -.01 | |
| 95% CI B (upper, lower) | | -5.43, 1.89 | | | -5.14, 1.45 | | | -0.46, 0.21 | |
| <i>Bayes Factor</i> _{H(0, scale of theory)} | | 0.99 _{H(0, 0.03)} | | | 0.98 _{H(0, 0.03)} | | | 0.37 _{H(0, 0.25)} | |
| BF Robustness Region | | 1 ⁻⁷ , 3 | | | 1 ⁻⁸ , 2.5 | | | 1 ⁻⁸ , 1 | |

Note: * $p < .05$.

